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US3797688 A	Safety cap unit	ETHYL MOLDED PRODUCTS
EP2862811 A1	Capping device	INOSTRANNOJE PROIZV UNITARNOJE PREDPR ALCOPACK
US3917098 A	Safety closure cap	ANCHOR HOCKING
US20150014269 A1	Senior friendly child resistant closure	PACKAGING DESIGN
EP2451719 A1	Child resistant closure with a stacking position	BPREX HEALTHCARE PACKAGING
US3989153 A	Safety cap	REPUBLIC TOOL & MANUFACTURING
US3923184 A	Double screw cap system for sterile medical liquid container and method of opening same	GENERAL ELECTRIC CAPITAL
EP1068065 A1	Moulding method and container cap	LAWSON MARDON PACKAGING
US3812990 A	Safety closure assembly	ALCOA
US3692199 A	Child resistant closure	OWENS ILLINOIS CLOSURE
US3809272 A	Safety bottle closure	STERLING DRUG
US3795338 A	Ratchet drive child-resistant closure	OWENS ILLINOIS CLOSURE
EP--26284 A1	Safety screw-cap	ROBERT FINKE KUNSTSTOFF SPRITZGUSS WERK
US3722727 A	Safety closure for a medicine bottle	SUNBEAM PLASTICS
US5147052 A	Child resistant closure	REXAM HEALTHCARE PACKAGING, ...
EP1679268 A1	Non refillable stopper with double security device	PLASTIVIT
USB516032 I5	Torque limiter mechanism	GENERAL MOTORS
US3843015 A	Screw cap for containers	BLAU
EP2280880 A1	A decorative, tamperproof, closure	GUALA CLOSURES
US3968894 A	Safety closure cap	HERRMANN ERNST

Publication numbers	Title	Current assignees
US20110142526 A1	Safety closure for nail polish bottle	RACCAH ENRICO
WO9852841 A1	Safety closure and container assembly	BPREX HEALTHCARE PACKAGING
WO9503228 A1	Child-resistant closure	VAN BLARCOM CLOSURES
US3887099 A	Container safety closure	POLY SEAL
US20040262251 A1	Palm and turn child resistant closure	BERRY PLASTICS
US4084719 A	Security closures	BOUCHAGE MECANIQUE
US4213534 A	Child-resistant closure	SUNBEAM PLASTICS
FR2490598 A1	Plastic tamper proof stopper - comprises two parts screwed together with gripping ring rupturing weakened zone on unscrewing	CEBAL
US4413743 A	Child-resistant safety closure	METALDYNE
EP-164154 A2	Safety closure	TECHNOPLAST
US4345690 A	Safety closure	CMB PACKAGING
US3622027 A	Safety bottle closure	STERLING DRUG
EP--98722 A2	A safety closure	PALSSON JOHANNES SAEMUNDUR
US3901403 A	Tear-open tamperproof closure seal	WEST
EP3237296 A1	Squeeze and turn child resistant closure attachment	OPTIMAL DESIGN, ...
US3445022 A	Childproof safety container and closure	FRANK A CILLUFFO
US4014449 A	Safety cap	REPUBLIC TOOL & MANUFACTURING
GB9400726 D0	Closure assembly for liquid container	DANIEL MONTGOMERY & SON
US20110147334 A1	Child resistant closure with improved assembly	PRASSMAK INDUSTRIES
US4752014 A	Tamper-evident child-resistant closure and container with same	POLY SEAL
US20190127120 A1	Structural node of tight separable joint of bottle neck with its threaded screwed cap	CONTISSI JANUSZ CHUPTYS
US4095717 A	Safety overcap for standard metal screwcaps	ALMAR ENTERPRISES
US3993209 A	Child-resistant cap	SUNBEAM PLASTICS
US3650426 A	Safety cap	ETHYL MOLDED PRODUCTS
US3848761 A	Child-proof closures	NEWBY A WESLEY
EP2331422 A1	Closure with stopping mechanism	BPREX HEALTHCARE PACKAGING
EP2860129 A1	Safety cap	SHINKO CHEMICAL
EP1694576 A1	A tamper-evident closure	OBRIST CLOSURES SWITZERLAND

Publication numbers	Title	Current assignees
US3779147 A	Safety closure and package	ANCHOR HOCKING
US4527701 A	Tamper indicating child resistant closure	OWENS ILLINOIS CLOSURE
US3912101 A	Childproof closure	METAL BOX
US5161706 A	Twist and push snap-on child resistant cap	PRIMARY DELIVERY SYSTEMS
US3984021 A	Safety closure container	OWENS ILLINOIS CLOSURE
US3820676 A	Safety closure assembly and container	MUCSI M
US4351443 A	Dual liquid tight closures	UHLIG GERHARDT E
US5460281 A	Safety lock screw cap and container	WEST PENN PLASTICS NEW CASTLE
US20150344193 A1	Child-Resistant Closure	PLASTEK INDUSTRIES
US5316161 A	Child resistant closure	COMAR
US3027035 A	Safety closure for containers and the like	FARAGO JACQUELYN L
US5738231 A	Tamper indicating threaded closure-container package	BERRY PLASTICS
EP-633197 A1	Combination of a, by relative rotation, interlocking container and closure, as well as the application of such a combination	CEBAL
EP2428461 A1	Child-proof cap for an applicator	SULZER
EP-257481 A2	Child-proof threaded closure	RECKITT BENCKISER
WO200534834 A2	Methods and apparatus for shipping medical substances	JAYCOX DONALD L
EP2646336 A1	Push-and-turn child-resistant closure, shells, and package	BPREX HEALTHCARE PACKAGING, ...
US5292020 A	Closure with anti-backoff feature	PHOENIX CLOSURES
US3396864 A	Safety cap structure	FREDERICK E. JONES, ...
EP2170719 A1	Child-safe closure device with screw and collar for revealing first opening	CLARIANT
CN201158499U Y	Cap for container	XI ANSI PLASTIC PRODUCT
EP3038942 A1	Safety capsule for containers	SACMI
EP2776335 A1	A tamper evident closure	OBRIST CLOSURES SWITZERLAND
US5462182 A	Screws-on child resistant consumer-friendly closure	WEATHERCHEM
EP-141611 A2	Safety champagne cork	GOLDBERG JAMES ROBERT
EP1100727 A1	Security closure for bottles	GUALA CLOSURES
US4364484 A	Child resistant closure	SEAQUIST VALVE, ...
EP--30830 A1	Safety closure assembly.	PAC TEC
US4440306 A	Tamper-evident closure	SILVER INDUSTRIES
US5918752 A	Tamper-evident squeeze-and-turn child-resistant closure	BPREX HEALTHCARE PACKAGING

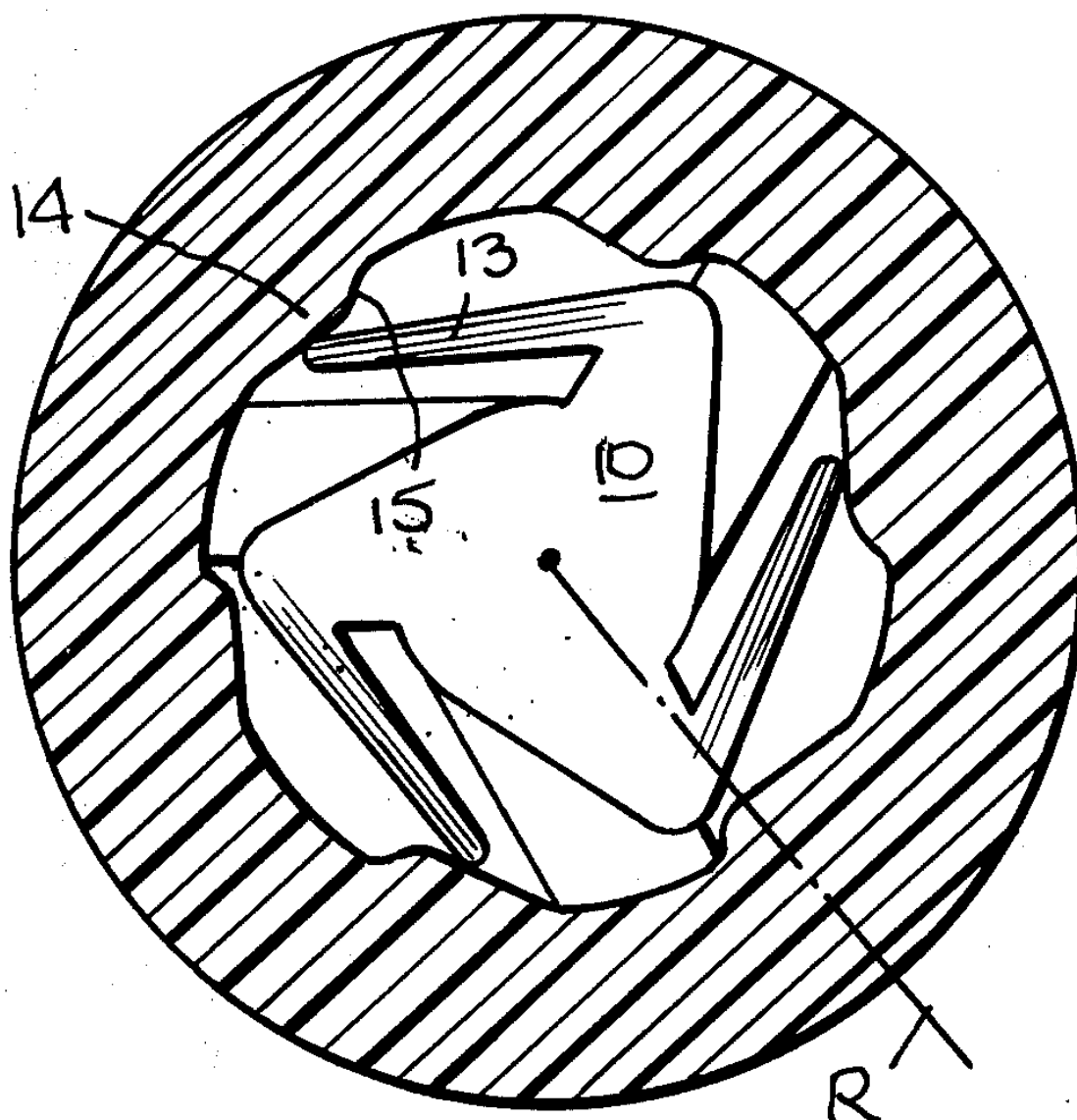
Publication numbers	Title	Current assignees
USB541015 I5	Safety closure means	ETHYL MOLDED PRODUCTS
EP-502379 A2	A closure device for bottles, particularly intended for bottles containing quality drinks	GUALA CLOSURES
US3679085 A	Child-proof cap for medicine bottles	SUNBEAM PLASTICS
EP2639181 A2	Safety cap	YONWOO
JP2003104408 A	Childproof cap	SHIROUMA SCIENCE
JP2014009012 A	Screw cap	YOSHINO KOGYOSHO
JP2006103715 A	Safety cap device	SHIROUMA SCIENCE, ...
US3934744 A	Closure assembly	ITW - ILLINOIS TOOL WORKS
EP-299886 A1	Arrangement between a screw closure with internal pouring spout and a container	SOCIETE NOUVELLE DE BOUCHONS PLASTIQUES S N B P
JP63152555 A	Safety cover	CROWN CORK JAPAN
US3951289 A	Safety-closure device	EYELET SPECIALTY
US3682343 A	Safety closure device	EYELET SPECIALTY
US3447709 A	Locking cap for bottles and the like	MARASCO VINCENT
CN102951358 A	Check button placement type bottle	SINO ASIA PLASTIC PACKAGE
US3638819 A	Child-safe closure	KERR GLASS MANUFACTURING
US3795337 A	Safety cap	YOSHINO KOGYOSHO
EP-586417 A1	Plastic safety cap.	TAPLAST

Family 1/100 - FAMPAT - ©Questel

Title

(US4037747)

Safety closure cap with torque control

Images**Publication numbers with kind code & date**[US4037747](#)

A

1977-07-26

US4037747

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US4037747)

An improved safety closure cap with an integral sealing torque control means is disclosed for use on medicine or other packages where it is desirable that children cannot open the package. The cap has an inner shell with container engaging thread means and an outer shell rotatably attached to the inner shell. Ratchet means including means for controlling the maximum cap application torque locks the shells together as they are turned onto a container. The ratchet means is inoperative as the cap is turned off permitting the outer shell to freely rotate on the inner shell. A second shell connecting means is provided for removal in the form of a pressure operated interlock which is activated by an adult's gripping certain portions of the shells to turn them off as a unit.

Inventors

ACTON DANIEL D

BOERSTLER JOHN W

Latest standardized assignees - inventors removed

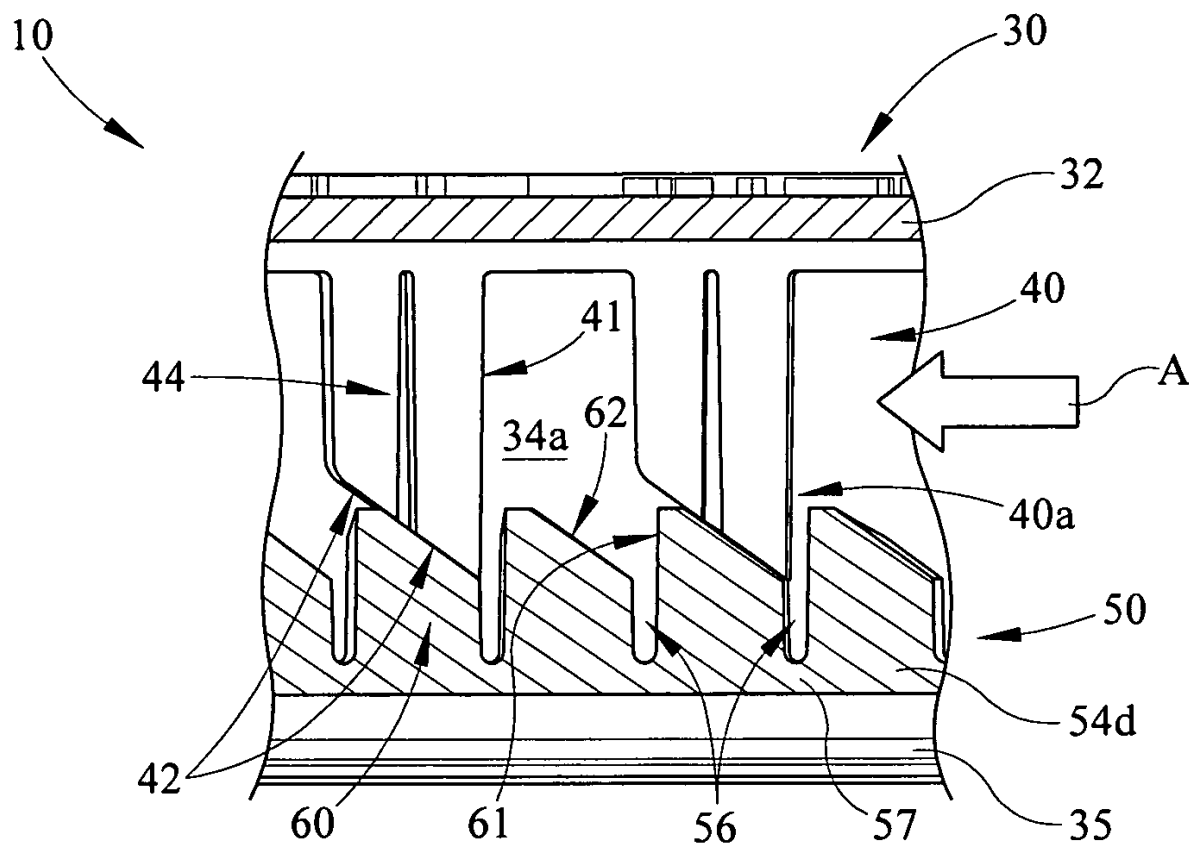
ANCHOR HOCKING

Family 2/100 - FAMPAT - ©Questel

Title

(US7988003)

Ratchet push and turn child resistant closure

Images**Publication numbers with kind code & date**[US7988003](#)

B1 2011-08-02

US7988003

**IPC - International classification**

B65D-055/02; B65D-055/02

Abstract

(US7988003)

A child resistant closure having a ratchet push and turn mechanism. The ratchet push and turn mechanism includes an over cap disposed over an under cap, each with ratchet teeth in operable engagement. The ratchet teeth of the closure may have a groove. Another groove may extend between adjacent ratchet teeth allowing air to escape from between the under cap and the over cap during the assembly process of the closure.

Inventors

CLODFELTER CHRISTOPHER B

Latest standardized assignees - inventors removed

BPREX HEALTHCARE PACKAGING

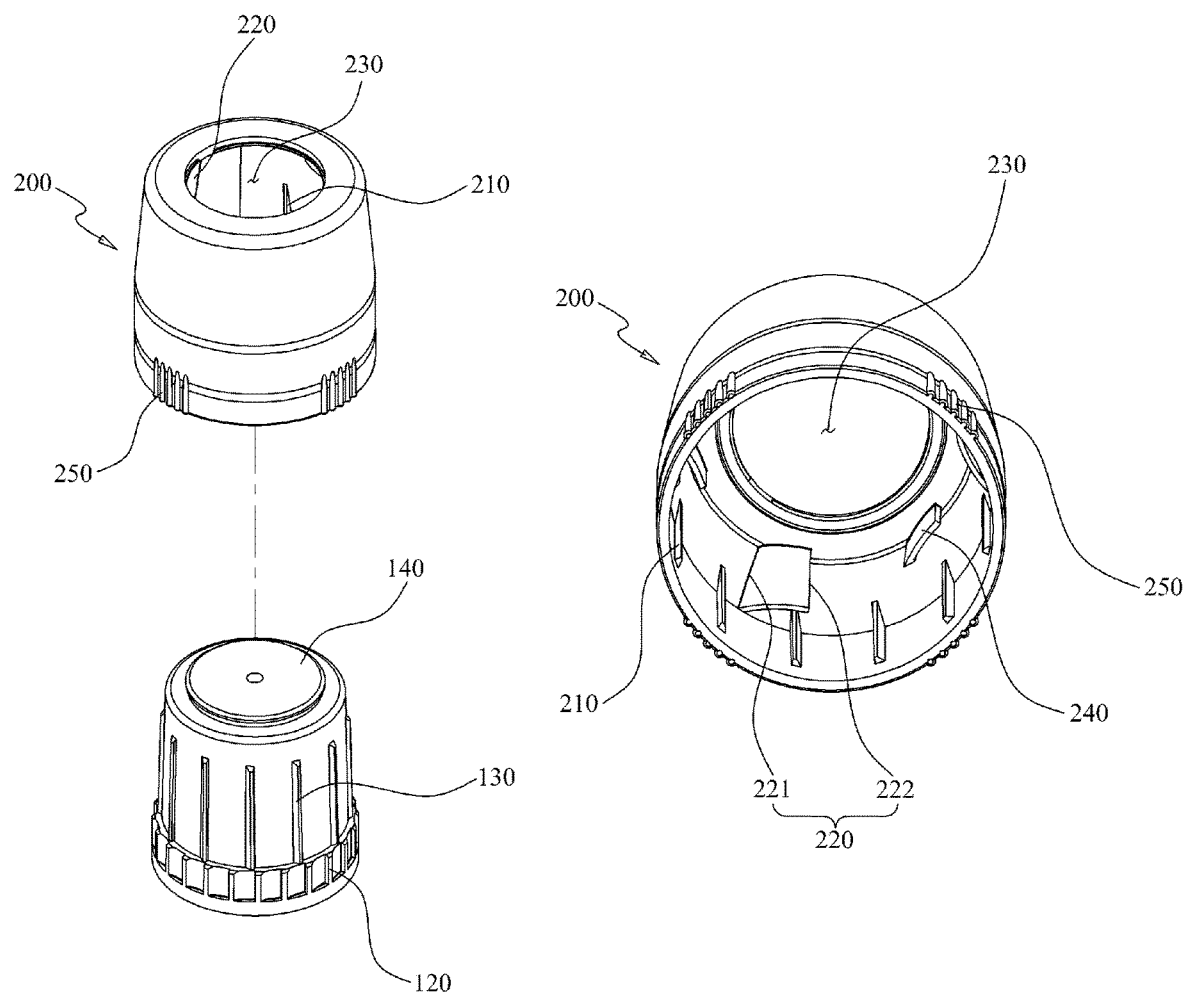
Family 3/100 - FAMPAT - ©Questel

Title

(EP3098181)

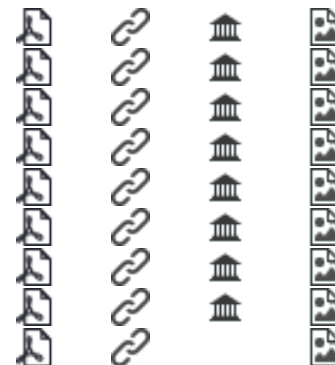
Side press-type safety cap

Images



Publication numbers with kind code & date

US9926115	B2	2018-03-27	US9926115
EP3098181	A4	2017-09-20	EP3098181
JP2017515760	A	2017-06-15	JP2017515760
EP3098181	A1	2016-11-30	EP3098181
CN105026279	B	2016-11-02	CN105026279B
US20160167847	A1	2016-06-16	US20160167847
CN105026279	A	2015-11-04	CN105026279
WO2015/111774	A1	2015-07-30	WO2015111774
KR101479069	B1	2015-01-07	KR101479069



IPC - International classification

B65D-041/04; B65D-050/04; B65D-050/04; B65D-050/08; B65D-051/24

Abstract

(EP3098181)

The invention disclosed herein relates to a side press safety cap, wherein when an outer cap is rotated to opening direction with sides of the outer cap pressurized, a first rotation protrusion of an outer cap is interlocked with open guide protrusions of an inner cap, rotating the inner cap, and thereby an inner cap is opened. On the other hand, when the outer cap is rotated to closing direction, a second rotation protrusion is interlocked with close guide protrusions, rotating the inner cap and thereby the inner cap is closed. As a result, the side press safety cap is possible to be opened and closed stably.

Inventors

JUNG SEO-HUI

CHEON SUNG-WOO

JUNG SHIN-BOK

Latest standardized assignees - inventors removed

YONWOO

Family 4/100 - FAMPAT - ©Questel

Title

(EP-711711)

A security closure for bottles and the like

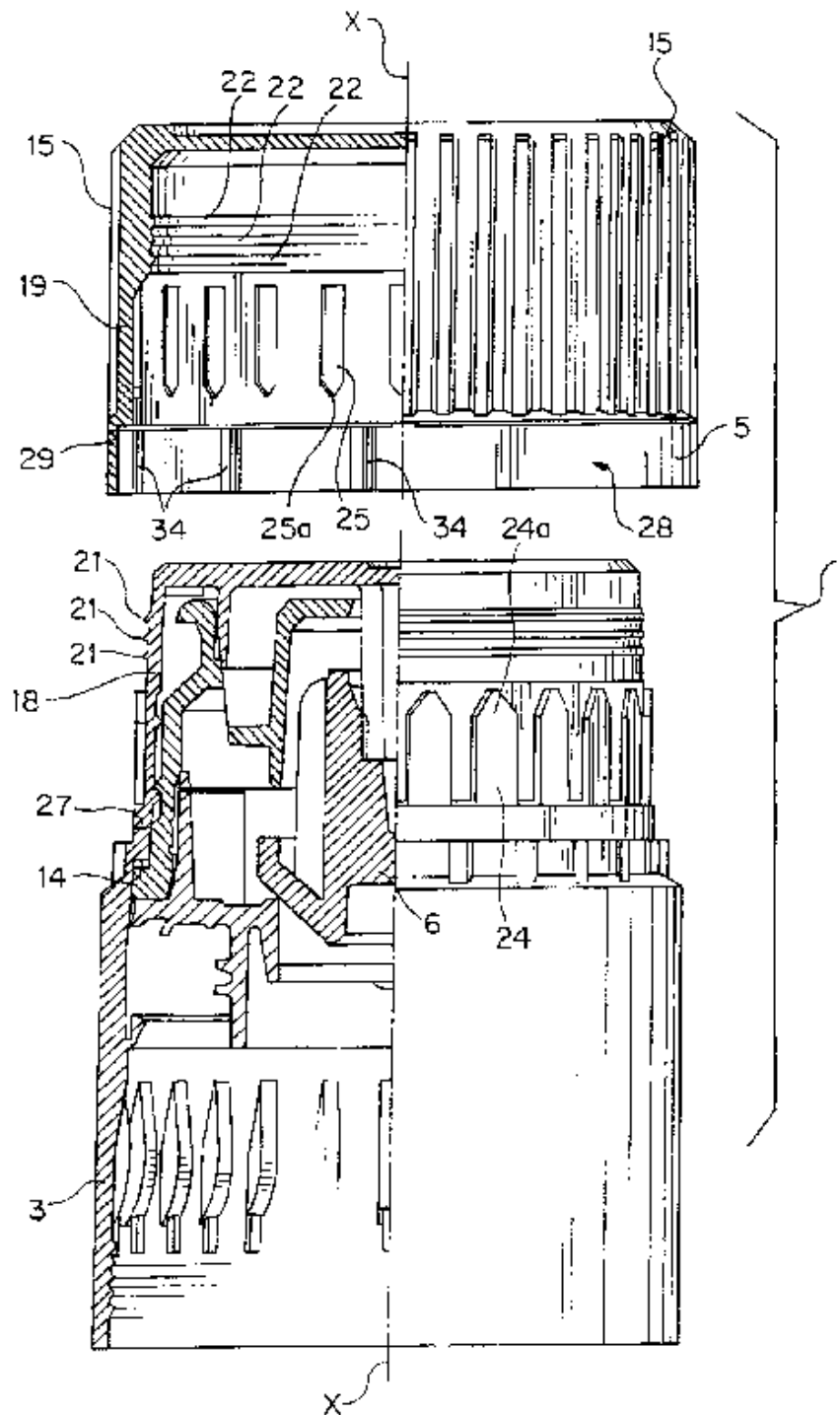
Images

FIG. 1

Publication numbers with kind code & date

CN1062824	C	2001-03-07	CN1062824C
RU2161585	C2	2001-01-10	RU2161585
US5740932	A	1998-04-21	US5740932



US5740932	A	1998-04-21	US5740932				
CO4520132	A1	1997-10-15	CO4520132A1				
BR9505126	A	1997-09-09	BR9505126				
DE69402325	T2	1997-07-03	DE69402325				
ES2100660	T3	1997-06-16	ES2100660				
AR000065	A1	1997-05-21	AR-----65				
DE69402325	D1	1997-04-30	DE69402325				
EP0711711	B1	1997-03-26	EP-711711				
CN1134385	A	1996-10-30	CN1134385				
ZA9509524	B	1996-05-27	ZA9509524				
EP0711711	A1	1996-05-15	EP-711711				
BRPI9505126	A1	1995-12-05	BR9505126				

IPC - International classification

B65D-041/34; B65D-041/34; B65D-041/38; B65D-043/02; B65D-047/12

Abstract

(EP0711711)

A security closure for bottles and the like, which makes unauthorized opening clearly evident, comprises a pourer body (2), a cylindrical sleeve (3) having an inner rim (10) for retaining the pourer body (2), a cap (4) screwed onto the pourer body (2), and a security band (5) constituted by a ring (28) which is divided into two structurally-independent, identical portions (30,31), and which is fixed to the cap by means of a weakened line (29), external teeth (33) being formed on the cylindrical sleeve and opposing internal teeth (34) being formed on the ring for engaging the teeth when the cap is first unscrewed.

<IMAGE>

Inventors

BATTEGAZZORE PIERO

Latest standardized assignees - inventors removed

GUALA PATENT

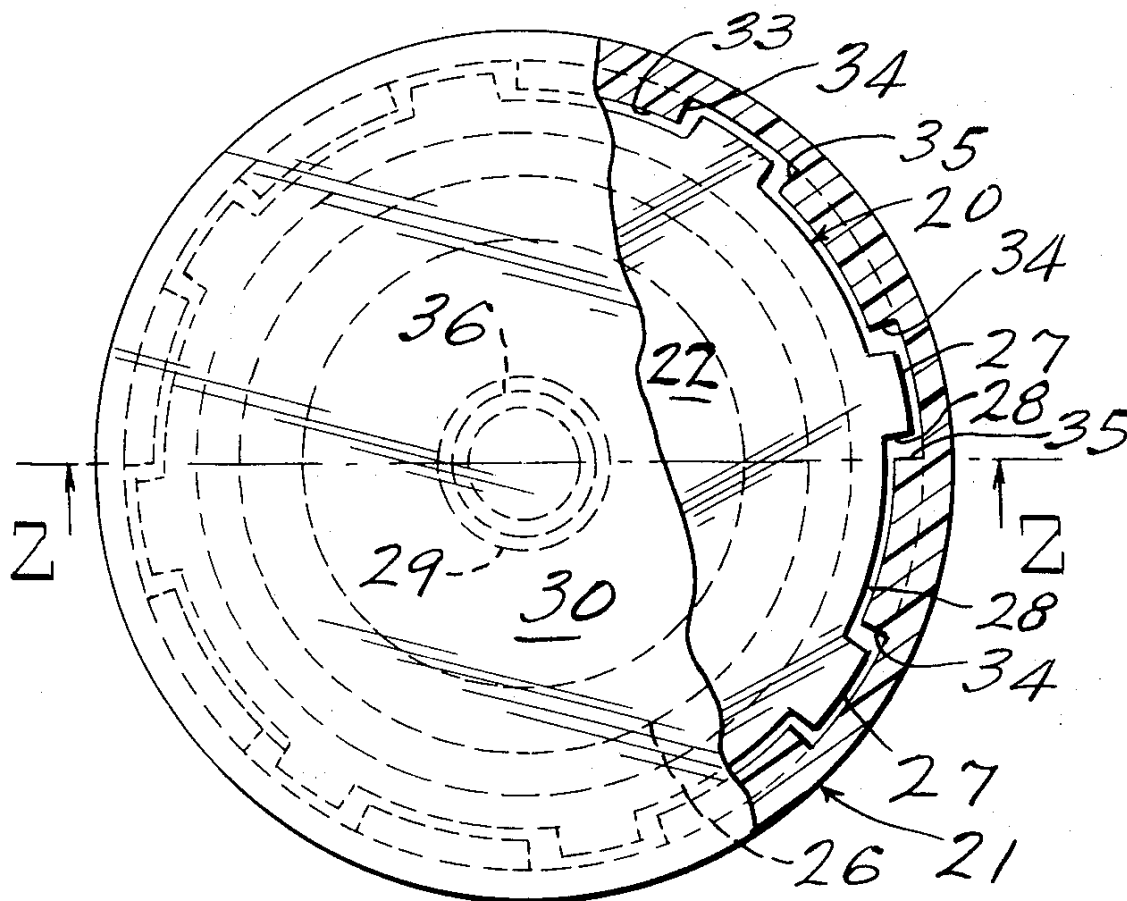
Family 5/100 - FAMPAT - ©Questel

Title

(US3830390)

Safety closure for medicine bottles or the like

Images

**Publication numbers with kind code & date**

US3830390

A

1974-08-20

US3830390

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US3830390)

A safety closure for a container having a threaded neck. The closure consists of a relatively stiff, inner threaded cap and a relatively resilient outer driver. The inner cap has a circular top and cylindrical skirt. There are a plurality of ribs on the outer side of the cap skirt at the periphery of the top. The driver has a cylindrical skirt and a top and is telescopically fitted over the cap. There is a series of inwardly and downwardly extending lugs at the inner side of the junction of the top and skirt of the driver. A spacer at the center top of the cap holds the driver in normal, vertically spaced position. The lugs have vertical front edges which extend downwardly a distance sufficient to extend between and engage the ribs for driving the cap onto the container neck. The lugs also have vertical back edges which do not extend downwardly such distance when the driver is in normal position. The cap is removed from the container by flexing the periphery of the driver downwardly to engage the back edges of the lugs with the ribs on the cap. In another embodiment, the spacer is annular and holds the rim of the driver up, the lugs and ribs are at inner annular areas, the overcap and driver, respectively, and the central portion of the top of the overcap is flexed downwardly to engage the back edges of the lugs with the ribs for unscrewing the cap.

Inventors

GACH P

Latest standardized assignees - inventors removed

SUNBEAM PLASTICS

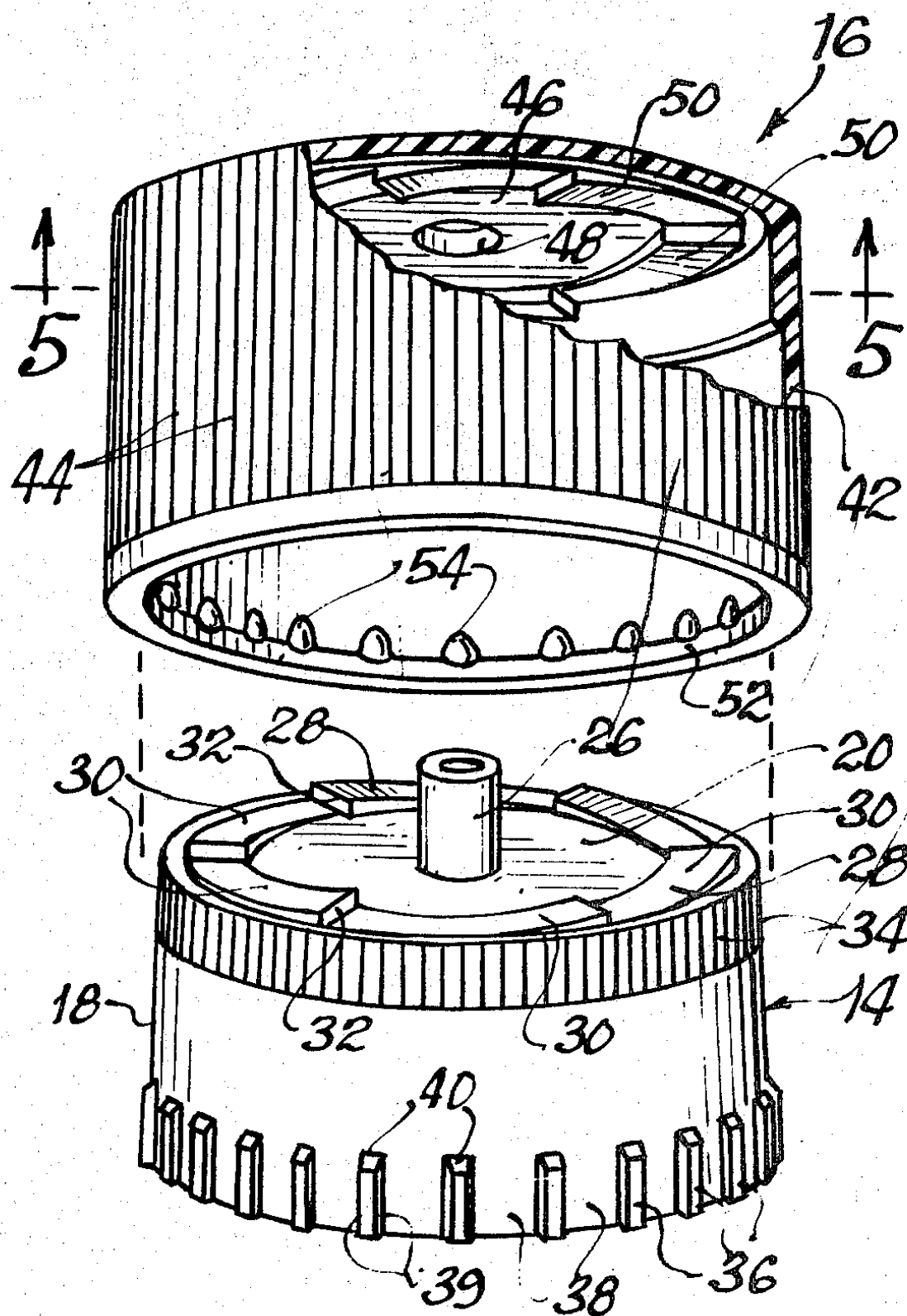
Family 6/100 - FAMPAT - ©Questel

Title

(US3797688)

Safety cap unit

Images



Publication numbers with kind code & date

US3797688

A 1974-03-19

US3797688



IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US3797688)

The invention relates to a safety cap unit for containers such as bottles and the like, whereby unauthorized removal of the cap from the container is prevented. More particularly, it relates to a closure unit comprising an inner or closure cap which

is used to close the open end of a container cooperatively connected with an outer or actuator cap superimposed over the inner cap, with interlocking means between the outer and inner caps to permit the two caps to be rotated in unison to lock the inner cap as a closure for the container so that unlocking of the inner cap with respect to the container takes place only when the outer cap is moved axially upward relative to the inner cap so that there is an interengagement between the outer and inner caps. The outer cap has a top wall surface of such character as to permit it to flex or give sufficiently to permit interengagement of the outer and inner caps.

Inventors

PORCELLI J

OSTROWSKY E

Latest standardized assignees - inventors removed

ETHYL MOLDED PRODUCTS

Family 7/100 - FAMPAT - ©Questel

Title

(EP2862811)

Capping device

Images

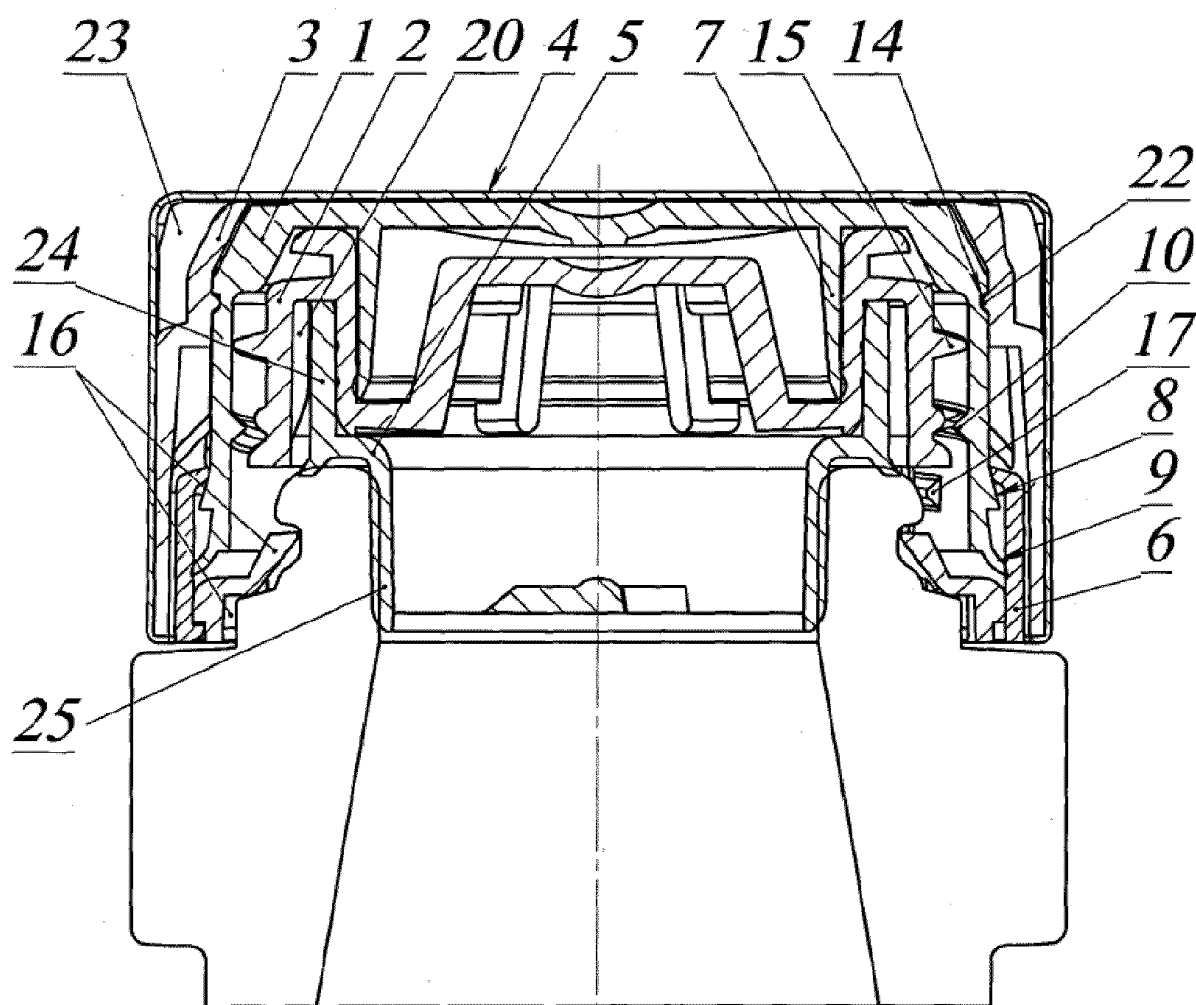


Fig. 1

Publication numbers with kind code & date

PL2862811

T3 2016-11-30

PL2862811

EP2862811

B1 2016-06-01

EP2862811



CA1045079	A	1978-12-26	CA1045079				
GB1529707	A	1978-10-25	GB1529707				
ES441686	A1	1977-04-01	ES-441686				
JPS5166080	A	1976-06-08	JP51066080				
FR2288040	A1	1976-05-14	FR2288040				
DE2546598	A1	1976-04-22	DE2546598				
NL7510471	A	1976-04-21	NL7510471				
LU73310	A1	1976-04-13	LU--73310				
BE832954	A	1975-12-31	BE-832954				
US3917098	A	1975-11-04	US3917098				

IPC - International classification

B65D-041/04; B65D-041/04; B65D-050/04

Abstract

(US3917098)

A safety closure cap is described for use in sealing medicine packages and other packages where it is desirable that persons such as young children cannot open the package. The cap has an inner shell with container engaging thread means and an outer shell rotatably attached to and covering at least a substantial portion of the inner shell. Ratchet means on the shells locks them together when they are turned onto the container as the package is sealed or resealed. The ratchet means is inoperative when the closure cap is turned off so that the outer shell freely rotates on the inner shell. A separate shell connecting means is provided for removal comprising pressure interlock means which may be activated by an adult user's gripping portions of the shells at a particular location causing them to rotate as a unit and permitting the closure cap to be twisted off of the container.

Inventors

ACTON DANIEL D

KOONTZ CARL E

Latest standardized assignees - inventors removed

ANCHOR HOCKING

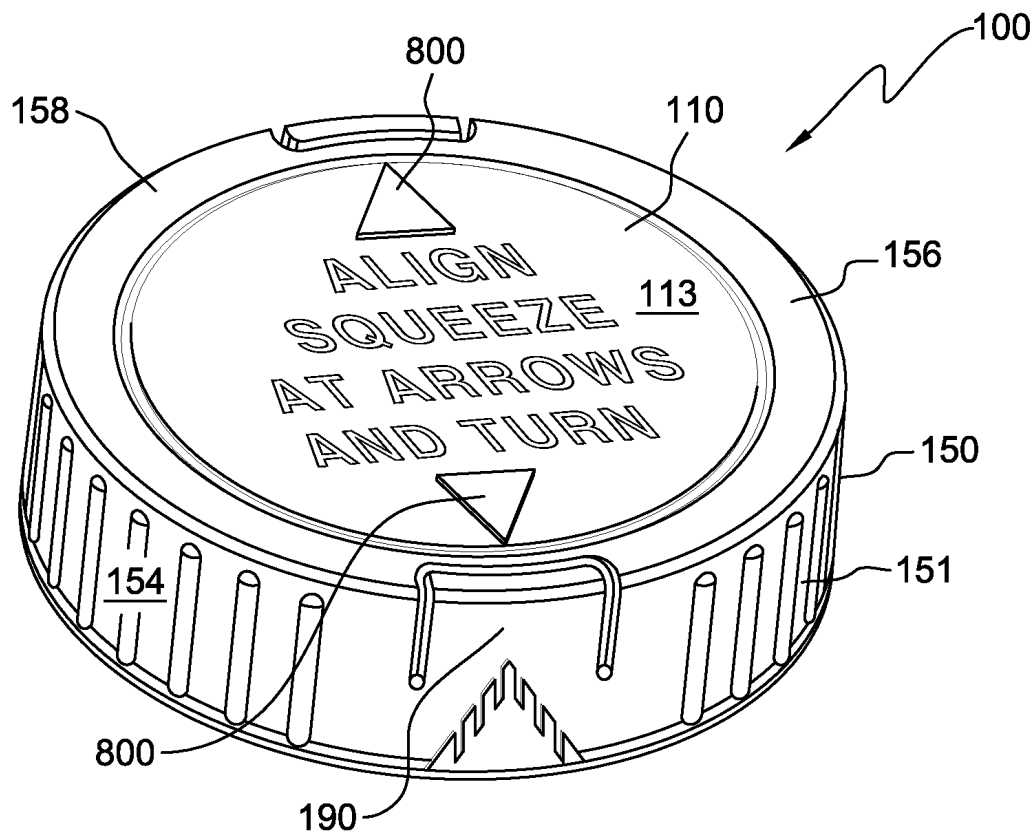
Family 9/100 - FAMPAT - ©Questel

Title

(US20150014269)

Senior friendly child resistant closure

Images

**Publication numbers with kind code & date**[US20150014269](#)

A1 2015-01-15

US20150014269

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US20150014269)

A child-resistant closure for a container having an externally threaded neck finish includes an assembly of an inner cap and an outer shell. The inner cap includes internal threads for engaging the externally threaded neck finish of the container. The inner cap and outer shell include mutually engageable stops to allow closing rotation of the closure relative to the container and prohibit opening rotation of the closure relative to the container. The inner cap and outer shell also include mating components that, when aligned and engaged, will allow opening rotation of the closure relative to the container when a compressive force is applied to a flexible area on the outer shell.

Inventors

GILLMAN KENNETH

Latest standardized assignees - inventors removed

PACKAGING DESIGN

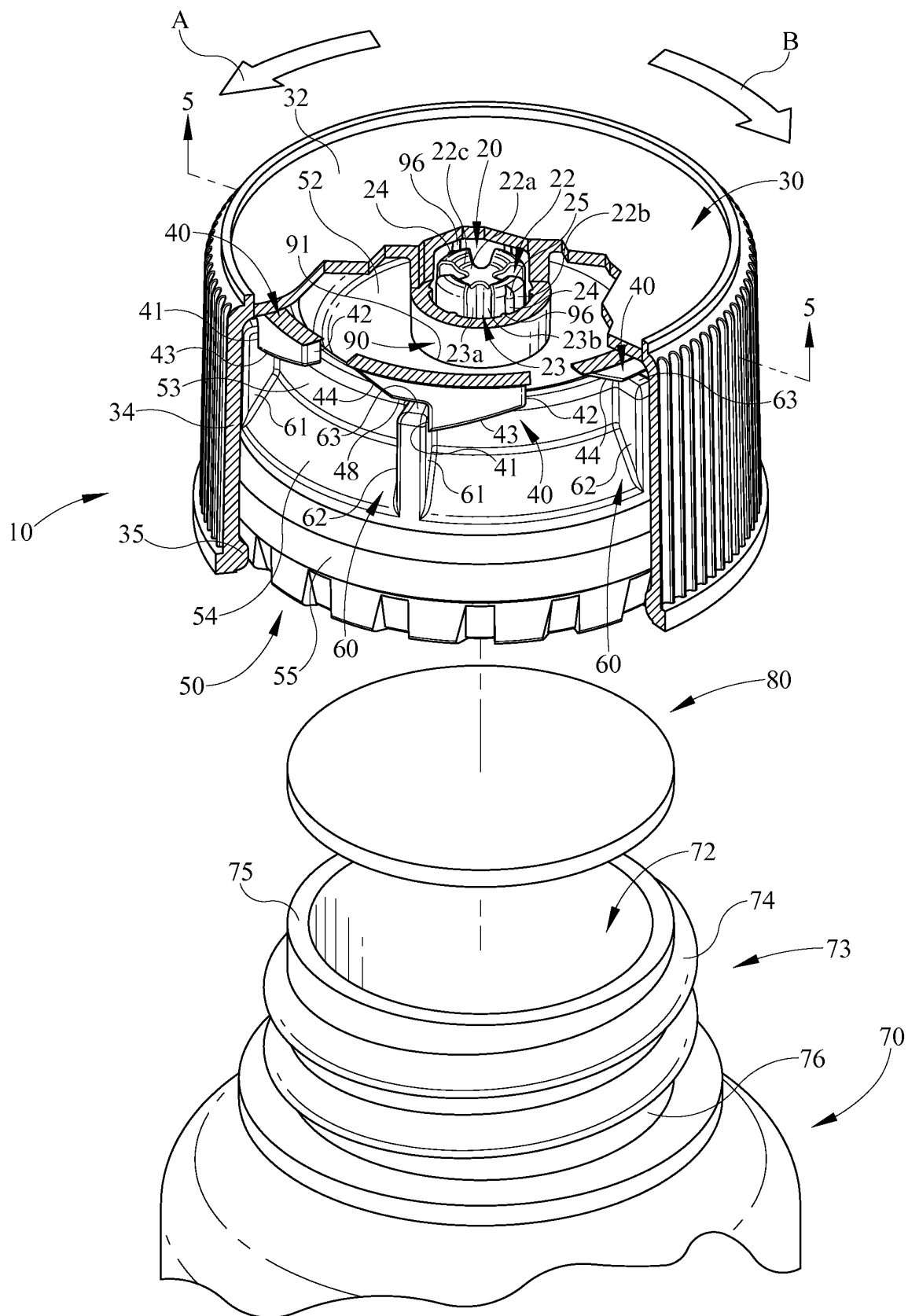
Family 10/100 - FAMPAT - ©Questel

Title

(EP2451719)

Child resistant closure with a stacking position

Images

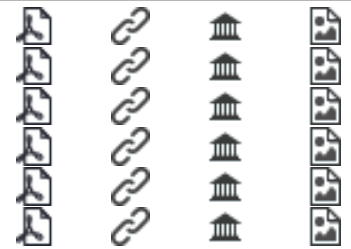


Publication numbers with kind code & date

BRPI1009632	A2	2016-03-15	BR201009632
CN102470959	B	2014-03-12	CN102470959B
EP2451719	B1	2013-05-01	EP2451719
BRPI1009632	A1	2012-11-27	BR201009632
EP2451719	A4	2012-11-21	EP2451719
IN0216/CHENP/2012	A	2012-11-02	IN2012CN00216



IN0216/CHENP/2012	A	2012-11-02	IN2012CN00216
US8186526	B2	2012-05-29	US8186526
CN102470959	A	2012-05-23	CN102470959
EP2451719	A1	2012-05-16	EP2451719
US20110006030	A1	2011-01-13	US20110006030
WO2011/005924	A1	2011-01-13	WO201105924

**IPC - International classification**

B65D-050/04; B65D-050/04; B65D-055/02; B65D-055/02

Abstract

(EP2451719)

A child resistant closure having an outer cap and an inner cap combined together. The caps are provided with complementary engaging ratcheting teeth making it possible to turn the caps as a unit in a closing direction but permits relative rotation of the caps upon rotation of the outer cap in an opening direction unless the outer cap is simultaneously deflected axially relative to the inner cap. Complementary load bearing surfaces are provided on the caps to prevent axial deflection when the caps are in a predetermined position and the caps resist rotation from this predetermined position.

Inventors

BRANSON MARK

BROZELL BRIAN

ZURAWICK PAUL

Latest standardized assignees - inventors removed

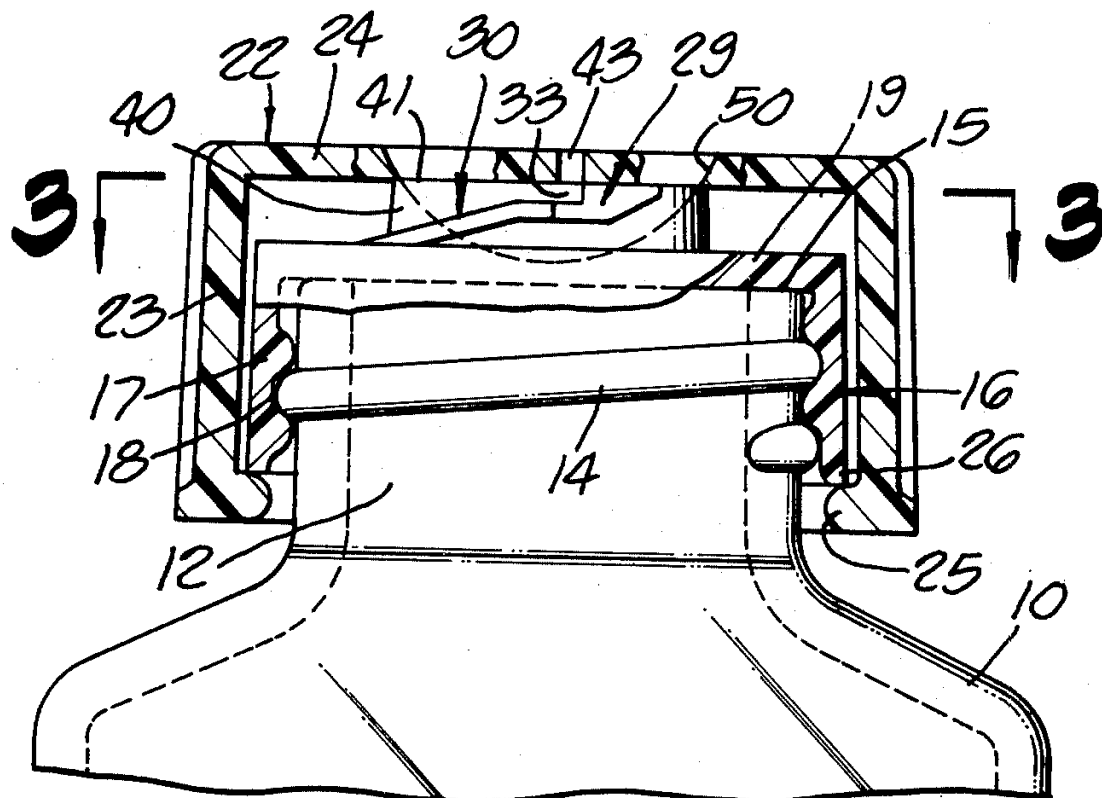
BPREX HEALTHCARE PACKAGING

Family 11/100 - FAMPAT - ©Questel

Title

(US3989153)

Safety cap

Images

[US3989153](#)

A

1976-11-02

US3989153

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US3989153)

A safety cap having means for signalling when the cap is tightly screwed onto the container comprising a cap member and a driver member surrounding the cap member with inner engaging means positioned between the driver member and the cap member for rotating the cap member in a direction to screw it onto the neck of the container, the means giving a signal when the cap is tightly screwed in place.

Inventors

MCROSKEY JOHN W

SWARTZ DELBERT D

MCROSKEY LEONARD H

Latest standardized assignees - inventors removed

REPUBLIC TOOL & MANUFACTURING

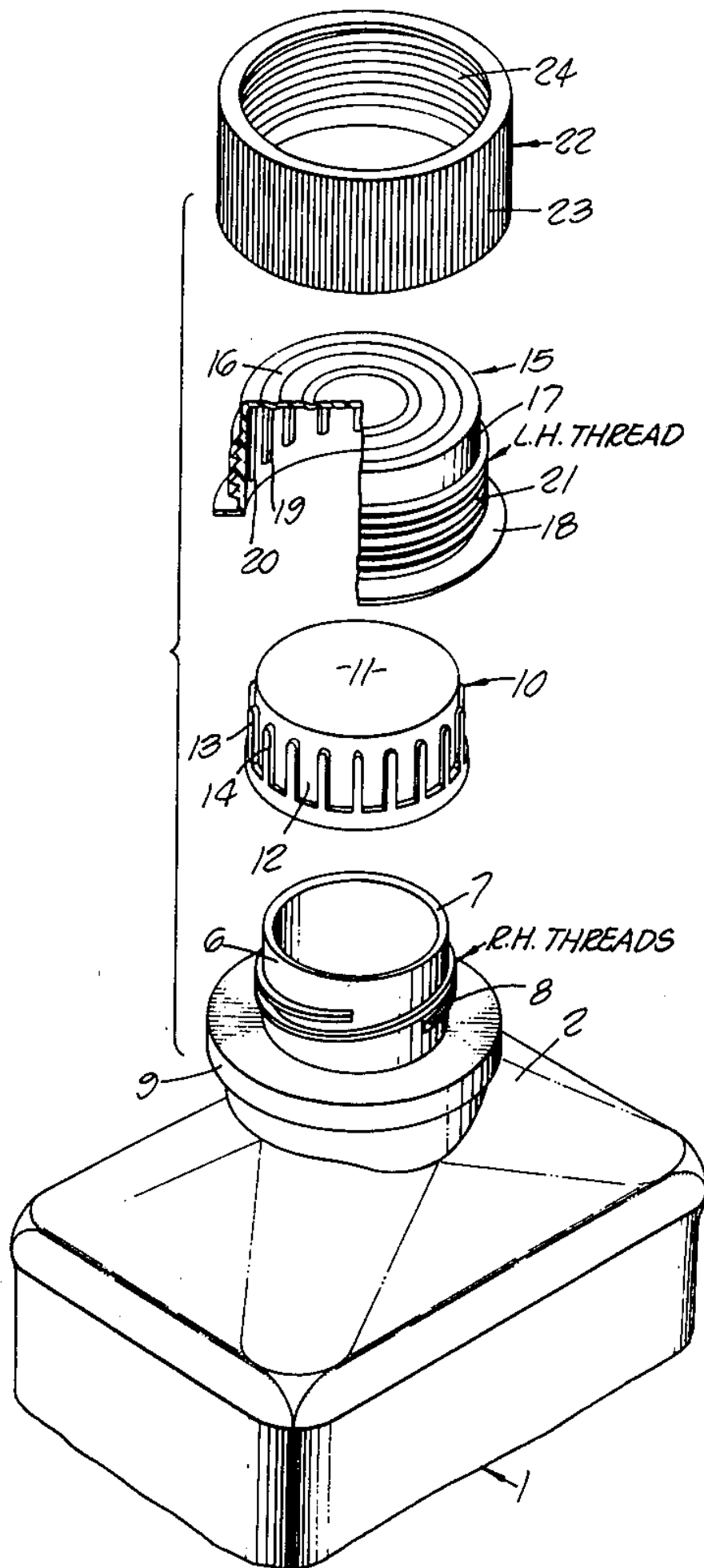
Family 12/100 - FAMPAT - ©Questel

Title

(US3923184)

Double screw cap system for sterile medical liquid container and method of opening same

Images



Publication numbers with kind code & date

US3950917	A	1976-04-20	US3950917
US3923184	A	1975-12-02	US3923184

**IPC - International classification**

B65D-050/06; B65D-050/06; B65D-055/02; B65D-055/02

Abstract

(US3923184)

A sterile medical liquid container system that includes an inner cap and an outer cap nested together and having interconnecting splines. The inner cap has internal right-handed threads and is screwed onto a threaded bottle neck to hermetically seal this neck. The outer cap has external left-handed threads and is fused at a frangible joint to the thermoplastic bottle. A jacking ring with internal left-handed threads screws onto the outer cap and a continuous clockwise motion of the jacking ring acts to (1) fracture the outer cap, and (2) unscrew the combined intersplined inner and outer caps from the container neck.

Inventors

CHOKSI PRADIP V

STEIDLEY ROY B

Latest standardized assignees - inventors removed

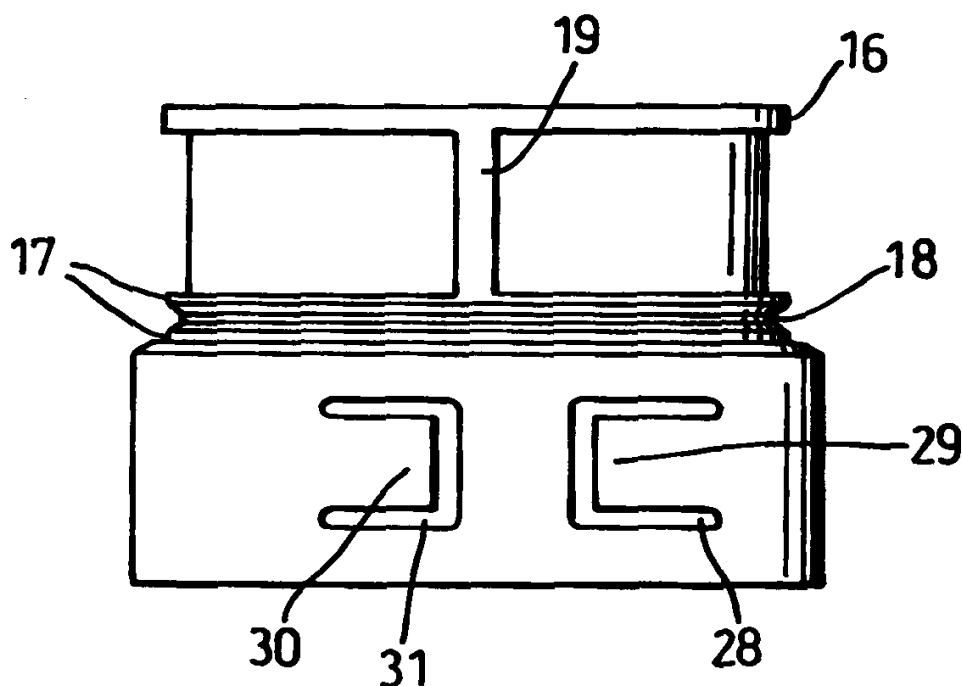
GENERAL ELECTRIC CAPITAL

Family 13/100 - FAMPAT - ©Questel

Title

(EP1068065)

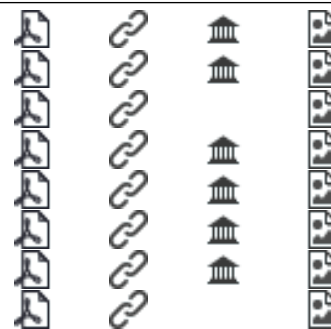
Moulding method and container cap

Images**Publication numbers with kind code & date**

ES2207190	T3	2004-05-16	ES2207190
DE69909606	T2	2004-04-15	DE69909606
EP1068065	B8	2003-10-22	EP1068065



EP1068065	B8	2003-10-22	EP1068065
DE69909606	D1	2003-08-21	DE69909606
AT245093	T	2003-08-15	ATE245093
EP1068065	B1	2003-07-16	EP1068065
EP1068065	A1	2001-01-17	EP1068065
AU2945499	A	1999-10-18	AU9929454
WO99/50050	A1	1999-10-07	WO9950050
GB9806911	D0	1998-05-27	GB9806911

**IPC - International classification**

B29C-045/00; B65D-050/04

Abstract

(EP1068065)

The cap is injection moulded with a main cap portion (11) having a skirt (14) co-axially attached to a sleeve (12) by frangible tags. The sleeve (12) is pushed into rotary engagement with the main cap portion (11) as the cap is stripped from the mould. The sleeve has a tab (29) delineated by a gap (28) in the sleeve and carrying a ratchet tooth (27), so that the ratchet tooth is sprung into engagement with a formation on the skirt, for rotation with the cap in one direction and rotation relative to the cap in the reverse direction.

Inventors

DUDZIK HENRYK

Latest standardized assignees - inventors removed

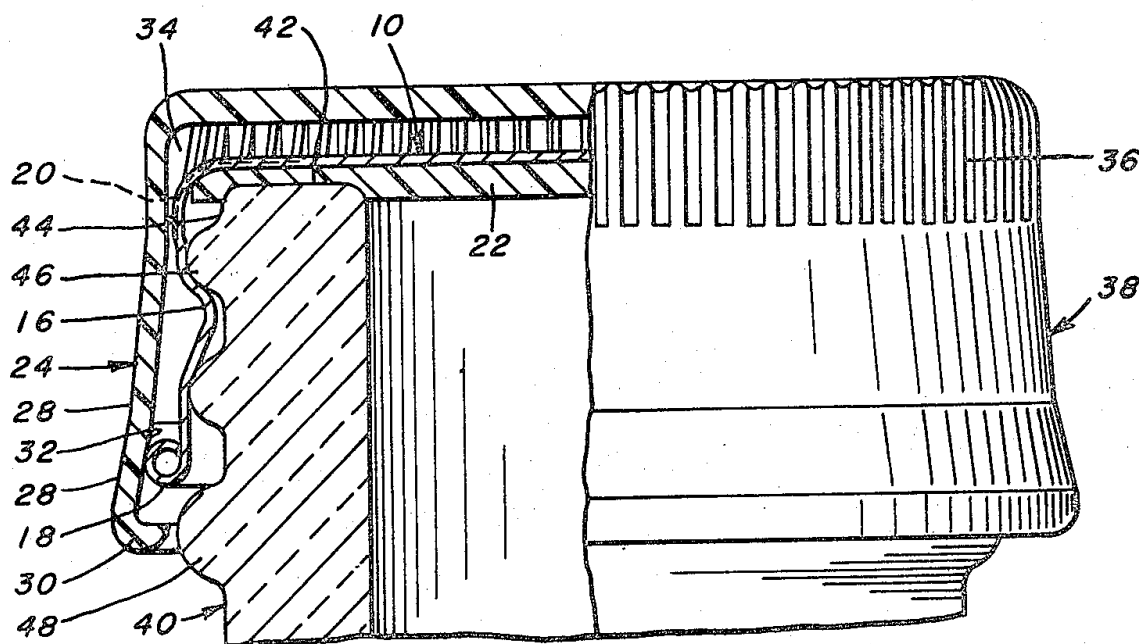
LAWSON MARDON PACKAGING

Family 14/100 - FAMPAT - ©Questel

Title

(US3812990)

Safety closure assembly

Images**Publication numbers with kind code & date**

US3812990	A	1974-05-28	US3812990
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**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US3812990)

A safety closure assembly is provided which includes an inner cap with threads formed in its skirt for affixation to a container by turning the cap, vertically aligned corrugations in the outer surface of the top portion of the cap skirt and an outwardly projecting bead on the lower edge of the skirt, and further including an outer flexible plastic cap which fits over the inner cap and which has inwardly projecting, vertically aligned teeth on its inner surface for engagement with the corrugations on the inner cap, an inwardly projecting flange on the bottom edge of the skirt for engagement under the bead on the inner cap to preclude separation of the caps, and an inwardly-upwardly inclined inner surface of the skirt above such flange for engagement against the outer surface of the bead on the inner cap to spring the outer cap upwardly with respect to the inner cap and thereby prevent engagement of the teeth on the outer cap with the corrugation on the inner cap unless substantial downward force is applied against the top of the outer cap.

Inventors

WILLIS W

Latest standardized assignees - inventors removed

ALCOA

Family 15/100 - FAMPAT - ©Questel

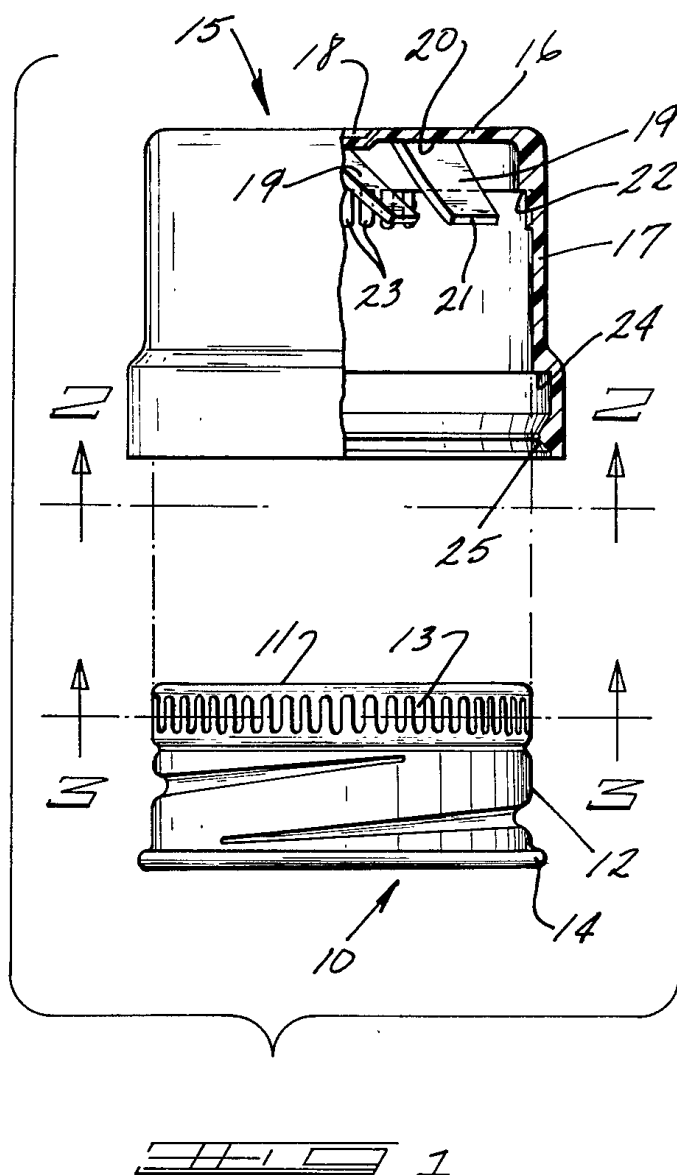
Title

(US3692199)

Child resistant closure

Images

SHEET 1 OF 3



INVENTOR.
GEORGE V. MUMFORD
BY
D. D. JAMES &
F. S. HALL

Publication numbers with kind code & date

US3692199

A

1972-09-19

US3692199

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US3692199)

A two-piece closure in which the inner closure member is formed of metal and composed of a circular top panel with integrally formed depending cylindrical skirt. The skirt is provided with the usual threads for attachment to the finish of a container. The lower end or edge of the skirt terminates in a rolled head or wire. The skirt portion just below the top panel is formed with knurling. A plastic overcap, having integrally formed, downwardly projecting spring members, is formed with a depending skirt which is adapted to enclose the metal inner closure. A bead is formed at the bottom of the skirt of the outer closure or covercap to retain the two caps loosely as a unit. Inwardly projecting ribs at spaced intervals about the inner surface of the covercap cooperate in one axial position to interlock with the knurling so as to provide means for removing the inner cap and in the unstressed or normal position, the tabs will maintain the two caps in a spaced relationship such that the outer cap will rotate freely relative to the inner cap.

Inventors

MUMFORD GEORGE V

Latest standardized assignees - inventors removed

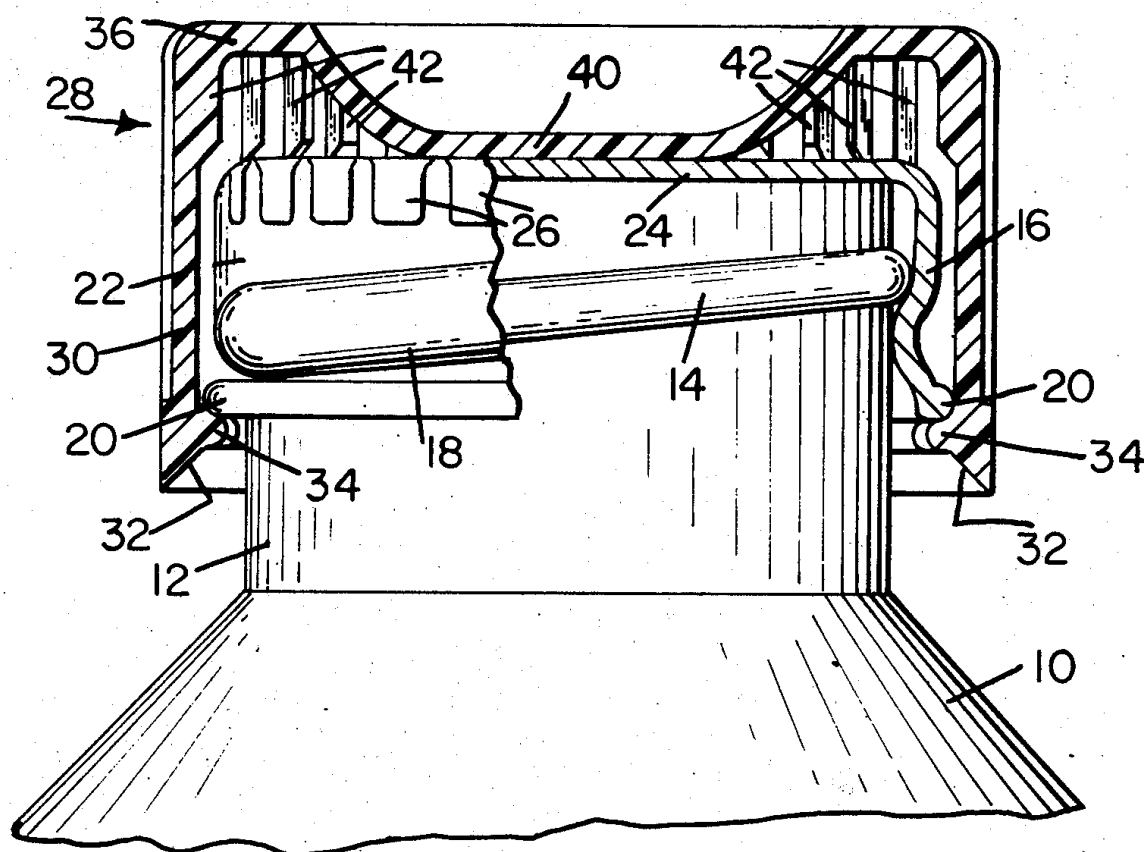
OWENS ILLINOIS CLOSURE

Family 16/100 - FAMPAT - ©Questel

Title

(US3809272)

Safety bottle closure

Images**Publication numbers with kind code & date**

US3809272

A

1974-05-07

US3809272



IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US3809272)

A closure cap of the screw-on or similar type having exterior knurls or the like at the periphery thereof, in combination with a safety overcap having complementary interior knurls or projections for selective engagement with the exterior knurls of the closure cap for turning the latter by rotation of the overcap, said overcap including a yieldable resilient depressed base engaging the base of the closure cap normally maintaining the overcap unengaged with respect to the closure cap. The interior knurls or projections on the interior of the overcap engage the exterior knurls at the periphery of the closure cap only upon the application of downward pressure on the safety overcap relative to the closure cap, said overcap rising to non-engaged position upon release of the pressure.

Inventors

MAKI E

Latest standardized assignees - inventors removed

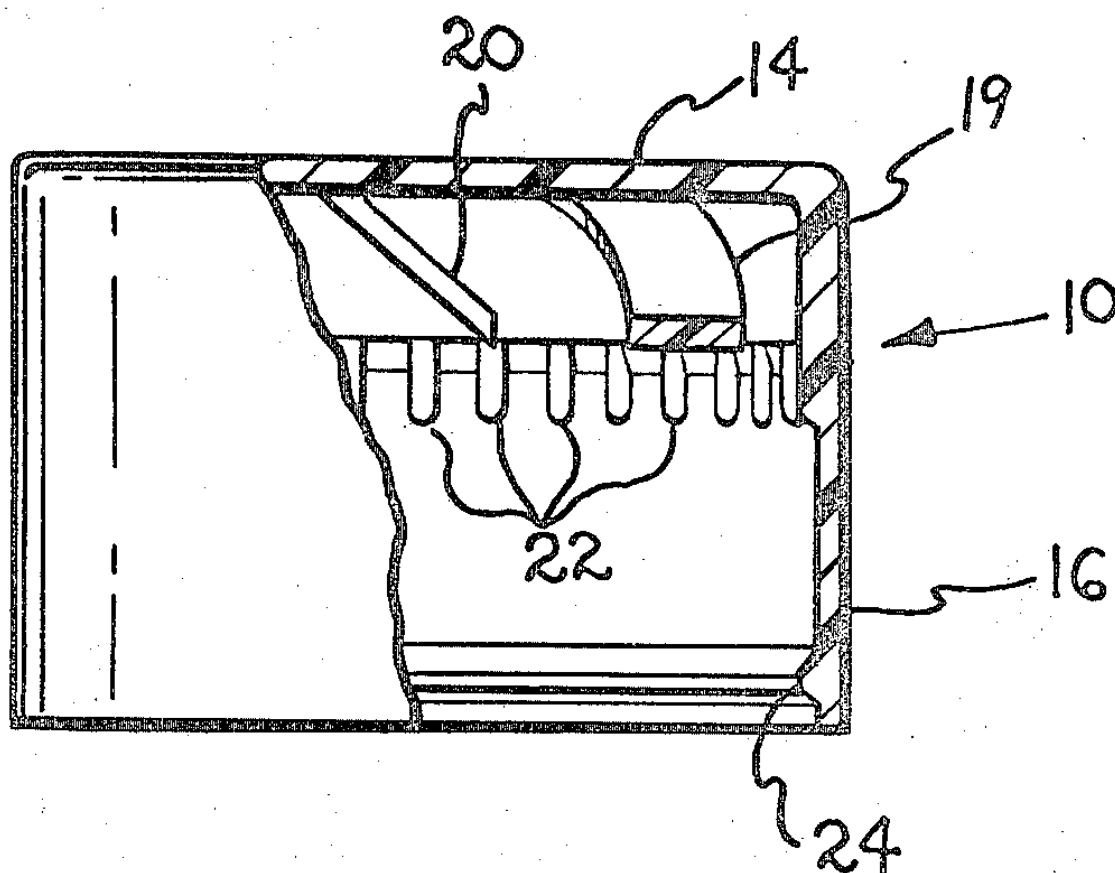
STERLING DRUG

Family 17/100 - FAMPAT - ©Questel

Title

(US3795338)

Ratchet drive child-resistant closure

Images**Publication numbers with kind code & date**[US3795338](#)

A 1974-03-05

US3795338

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

1. Safety screw closure consisting of an inner cap (1) having an internal thread and of an outer cap (9), fitting over the inner cap with axial spacing and displaceable axially towards the inner cap the purpose of unscrewing, wherein axially oriented external ribs (4) are situated on the inner cap and corresponding internal ribs (10) on the outer cap, the mutually facing surfaces of which ribs slide without axial pressure over one another without contact, characterized in that the external ribs (4) of the inner cap (1) possess, at their ends towards the cap base (5), oblique surfaces (6) inclined downwards in the screwing-up direction in the case of a right-hand thread, and the internal ribs (10) of the outer cap (9) possess, at their ends towards the open end of the outer cap, corresponding inclined surfaces (12) inclined upwards and coming into bearing on the inclined surfaces (6) of the inner cap (1) in the unscrewing direction.

Inventors

FINKE, KLAUS-WERNER

Latest standardized assignees - inventors removed

ROBERT FINKE KUNSTSTOFF SPRITZGUSS WERK

Family 19/100 - FAMPAT - ©Questel

Title

(US3722727)

Safety closure for a medicine bottle

Images

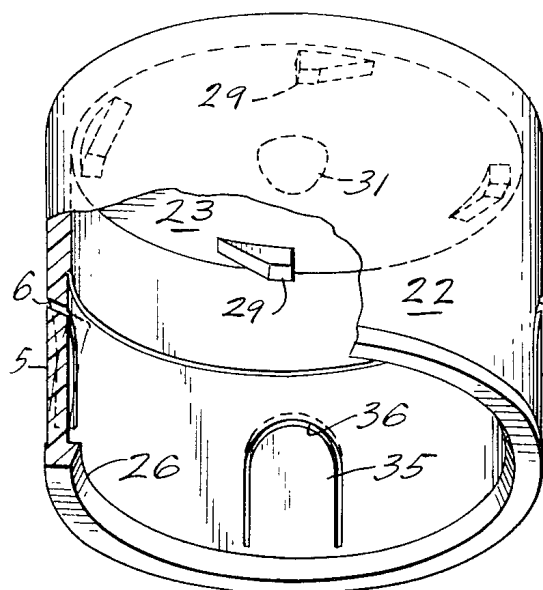


FIG-1-

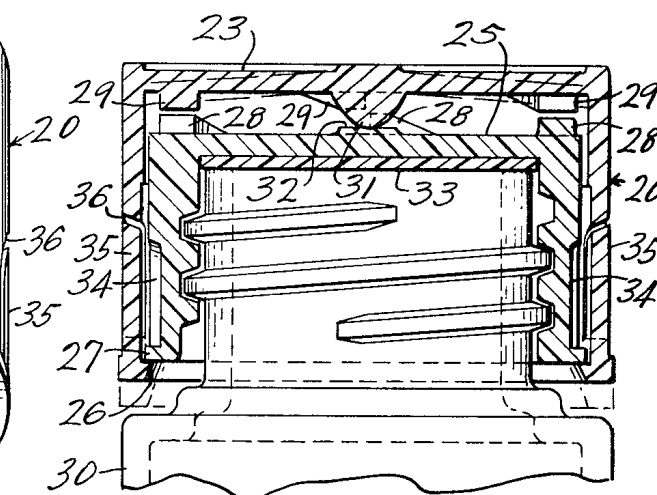


FIG-3-

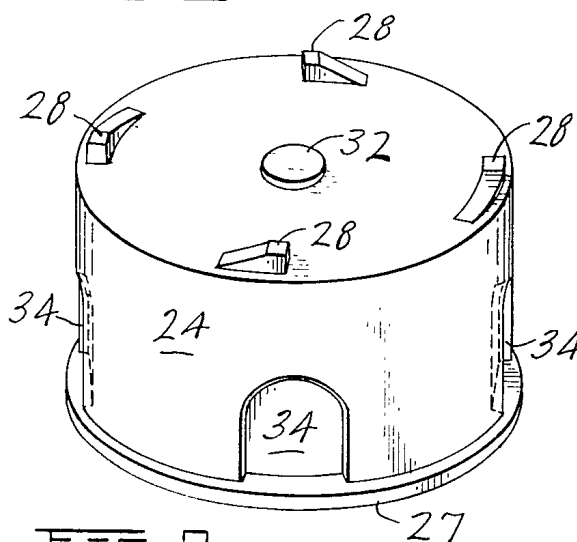


FIG-2-

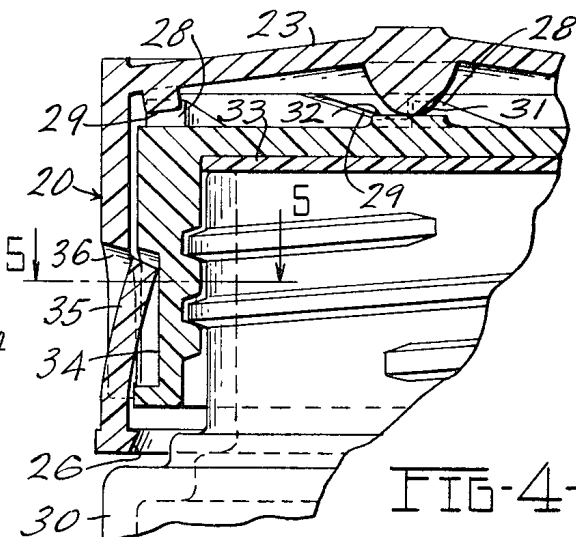


FIG-4-

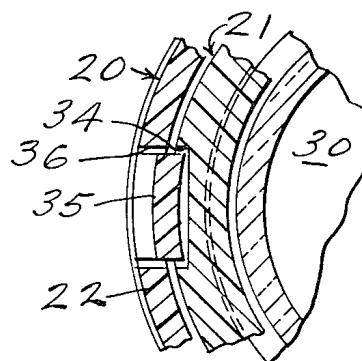


FIG-5-

INVENTOR:
PETER P. GACH.
 BY *(Cerven & Owen)*

ATT'YS

B65D-050/04; B65D-050/04

Abstract

(US3722727)

A child-proof closure for a medicine bottle or the like. The closure consists of a threaded cap and relatively flexible over-cap or driver. The cap and driver have cooperating ratchet drive means for screwing the cap onto the bottle by rotating the driver. The driver normally is rotatable in the opposite direction relative to the cap. The cap has a recess in its outer wall and a portion of the wall of the driver is radially inwardly displaceable for engagement in the recess for delivering unscrewing torque from the driver to the cap.

Inventors

GACH P

Latest standardized assignees - inventors removed

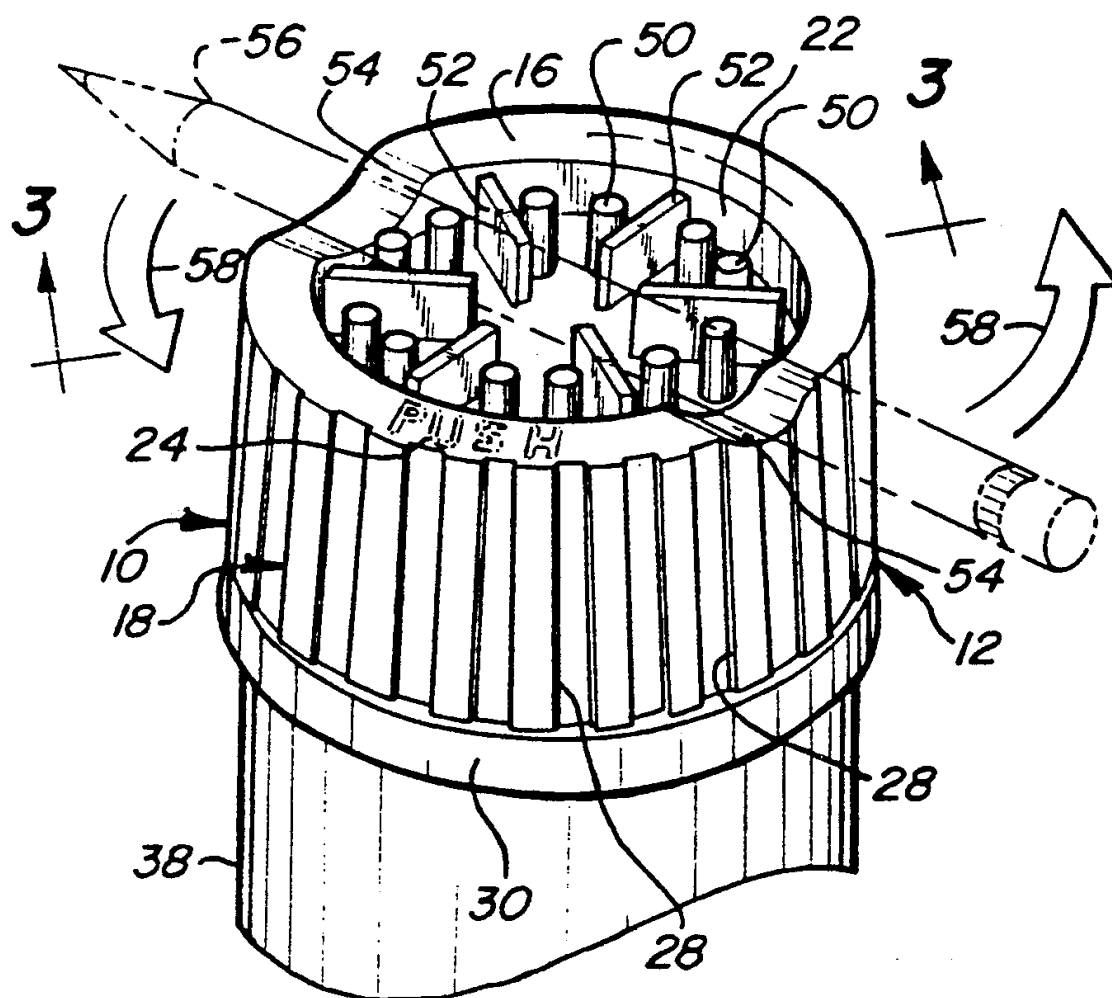
SUNBEAM PLASTICS

Family 20/100 - FAMPAT - ©Questel

Title

(US5147052)

Child resistant closure

Images**Publication numbers with kind code & date**[US5147052](#)

A 1992-09-15

US5147052

**IPC - International classification**

B65D-050/04; B65D-050/04; B65D-050/06

Abstract

(US5147052)

A two-piece child resistant closure having projections on the top of the inner cap. These projections are accessible through the open center of the outer cap top to assist the user in unthreading the container. This provides a user friendly closure for the elderly and arthritically impaired while still maintaining the usual child resistant opening feature, which can, for example, require a simultaneous push and turn movement.

Inventors

MINETTE JEFFREY C

Latest standardized assignees - inventors removed

REXAM HEALTHCARE PACKAGING

SUNBEAM PLASTICS

Family 21/100 - FAMPAT - ©Questel

Title

(EP1679268)

Non refillable stopper with double security device

Images

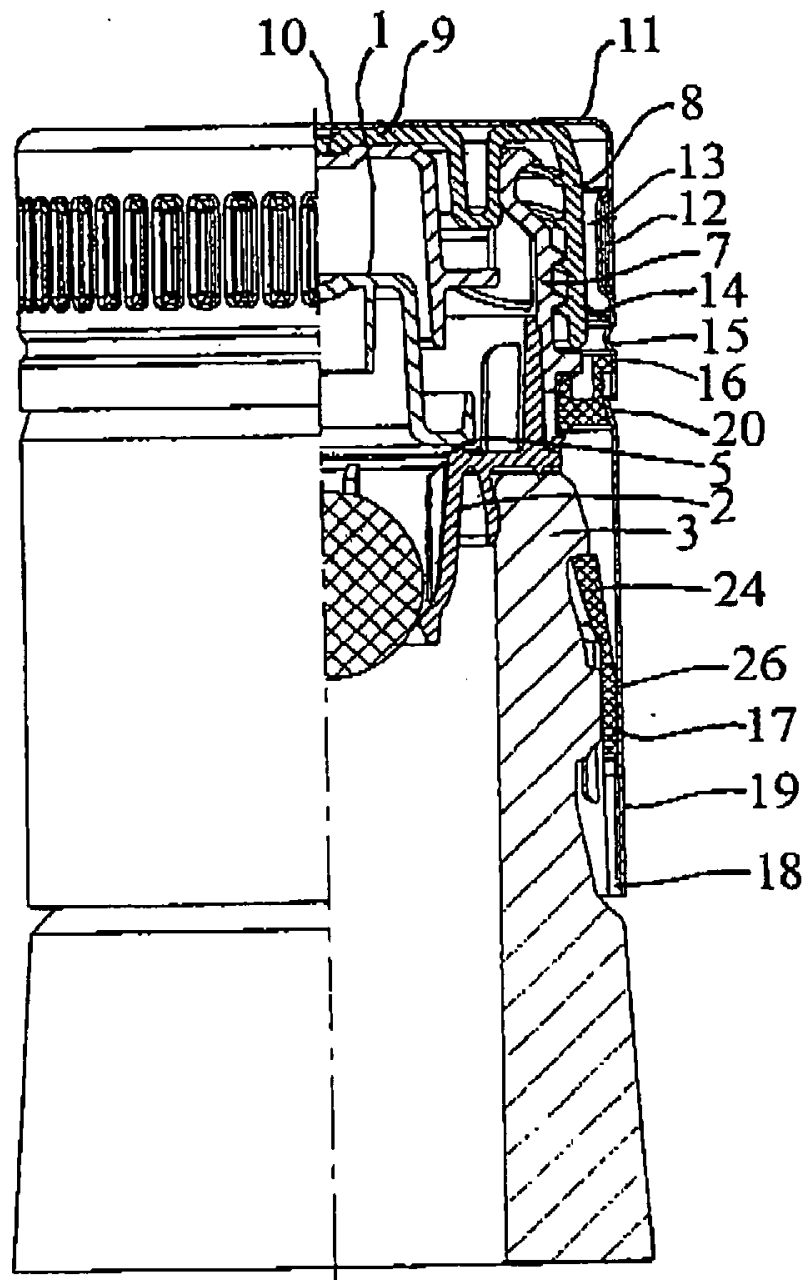


FIG. 1

Publication numbers with kind code & date

PL1679268	T3	2010-03-31	PL1679268
ES2334363	T3	2010-03-09	ES2334363
RU2377170	C2	2009-12-27	RU2377170
DE602005017114	D1	2009-11-26	DE602005017114
AT445547	T	2009-10-15	ATE445547
EP1679268	B1	2009-10-14	EP1679268
RU2005141807	A	2007-07-20	RU2005141807
AR052820	A1	2007-04-04	AR--52820



CO5710200	A1	2006-12-29	CO5710200A1				
BRPI0505629	A	2006-09-19	BR200505629				
EP1679268	A1	2006-07-12	EP1679268				
CN1792733	A	2006-06-28	CN1792733				
MXPA05014146	A	2006-06-23	MX2005PA014146				
BRPI0505629	A1	2006-02-21	BR200505629				
ES2229959	B1	2006-02-16	ES2229959				
ES2229959	A1	2005-04-16	ES2229959				

IPC - International classification

B65D-039/04; B65D-041/02; B65D-041/34; B65D-041/34; B65D-041/62; B65D-049/02; B65D-049/04; B65D-055/02; B65D-055/08; B65D-055/08; B67B-001/00

Abstract

(EP1679268)

Non refillable stopper with double security device. The non refillable stopper is characterised in that a special tubular closing element forming a tubular body which is connected to and surrounds the upper portion of the bottle neck has an upper projecting flange and a lower projecting flange respectively which are pressed inwards by the action of the external laminar covering, which may be displaced vertically during the stopper opening operation, so that said flanges, in view of their compressed disposition, thus protrude resiliently outwards when they are released by the laminar covering, and prevent said external laminar covering from descending again, said flanges being permanently visible and demonstrating the prior opening of the bottle stopper.

Inventors

MARTIN LOPEZ EDUARDO

Latest standardized assignees - inventors removed

PLASTIVIT

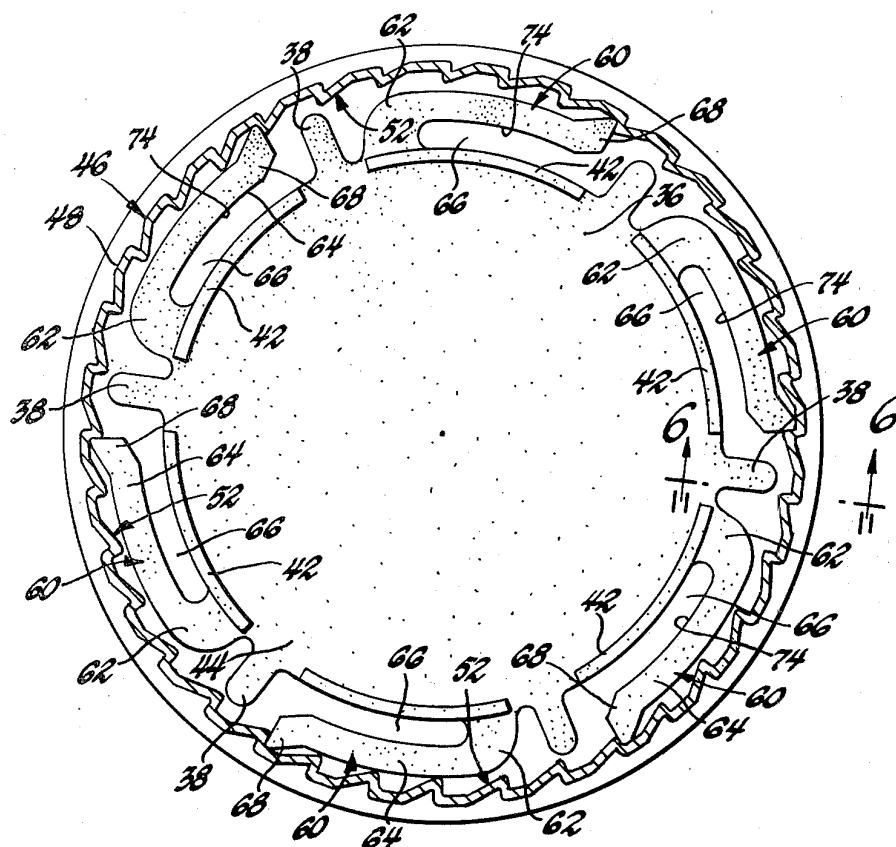
Family 22/100 - FAMPAT - ©Questel

Title

(US3986634)

Torque limiter mechanism

Images

**Publication numbers with kind code & date**

US3986634	A	1976-10-19	US3986634
USB516032	I5	1976-01-27	USB516032

**IPC - International classification**

B60K-015/04; B60K-015/04; F01P-011/02

Abstract

(USB516032)

A two piece torque release mechanism includes a metal cover having a peripheral flange with a plurality of circumferentially spaced, cam surfaces each including ramp and notch segments intersecting at a sharp radius point radially inwardly of a land segment; a plurality of integrally formed fingers on a driven member are sprung radially outwardly into operative engagement with the cam surfaces. Each finger has a sharp radius tip portion formed by the intersection of a flat radial surface and an inclined slip surface; the radial surfaces and notches define a positive interlock between the cover and the driven member for removing the driven member; the slip surfaces are mateable with the cam ramp segments to produce a torque release couple between the cover and the driven member to prevent overtightening of the driven member and to produce a reverse slip movement of each finger following torque release for parking the tip portions against the cam land segments so as to maintain the fingers in an unstressed position when the driven member is in place.

Inventors

SMITH CLAUDE A
WILLIAMS DONALD L

Latest standardized assignees - inventors removed

GENERAL MOTORS

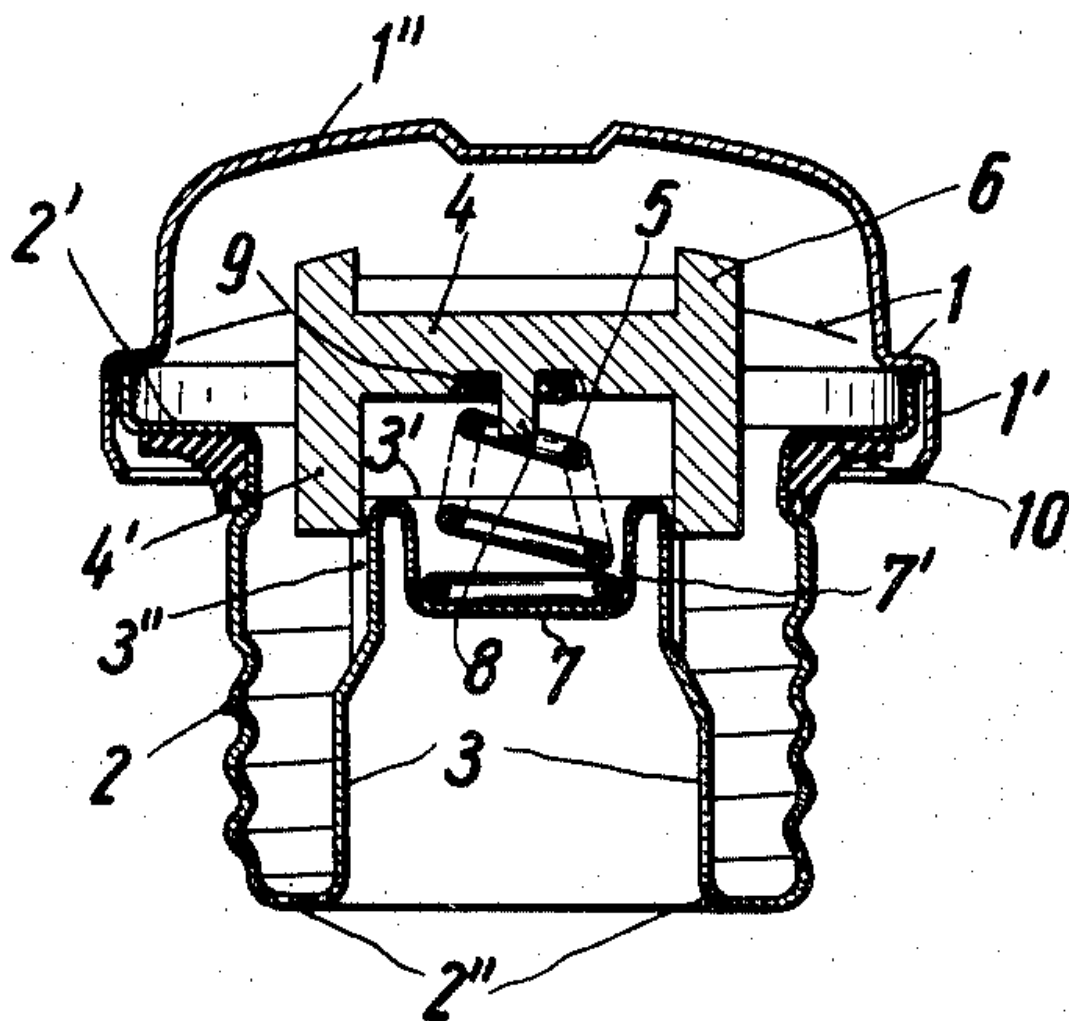
Family 23/100 - FAMPAT - ©Questel

Title

(US3843015)

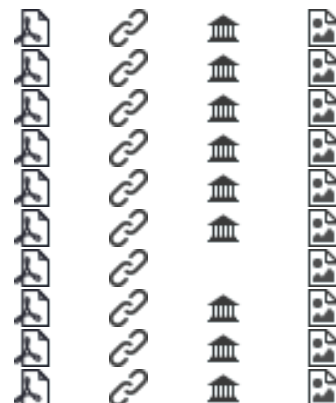
Screw cap for containers

Images



Publication numbers with kind code & date

DE2336537	C3	1980-03-27	DE2336537
DE2336537	B2	1979-07-19	DE2336537
DE2204088	B2	1976-02-26	DE2204088
GB1412195	A	1975-10-29	GB1412195
DE2336537	A1	1975-02-06	DE2336537
US3843015	A	1974-10-22	US3843015
IT973207	B	1974-06-10	IT-973207
FR2169660	A5	1973-09-07	FR2169660
DE2204088	A1	1973-08-09	DE2204088
BE794446	A	1973-05-16	BE-794446



IPC - International classification

B65D-039/08; F16J-013/12

Abstract

(US3843015)

A screw cap for containers, comprising a cap part and a threaded part, said cap part being mounted on and rotatable with respect to said threaded part, said cap part having a pressed-out hand grip arranged thereacross, means for coupling together said cap part and said threaded part comprising a bridge part, bearing limbs provided on said bridge part and spring means biasing said bridge part, said threaded part including grooves therein for guiding said bearing limbs, said spring means being located between said bridge part and said threaded part and urging said bridge part against said cap part and acting in such a manner that, on reaching a predetermined tightening torque of said threaded part in a thread, automatic decoupling of said parts occurs thereby preventing excessive tightening of said threaded part.

Inventors

BLAU W

GERDES T

Latest standardized assignees - inventors removed

BLAU

Family 24/100 - FAMPAT - ©Questel

Title

(EP2280880)

A decorative, tamperproof, closure

Images

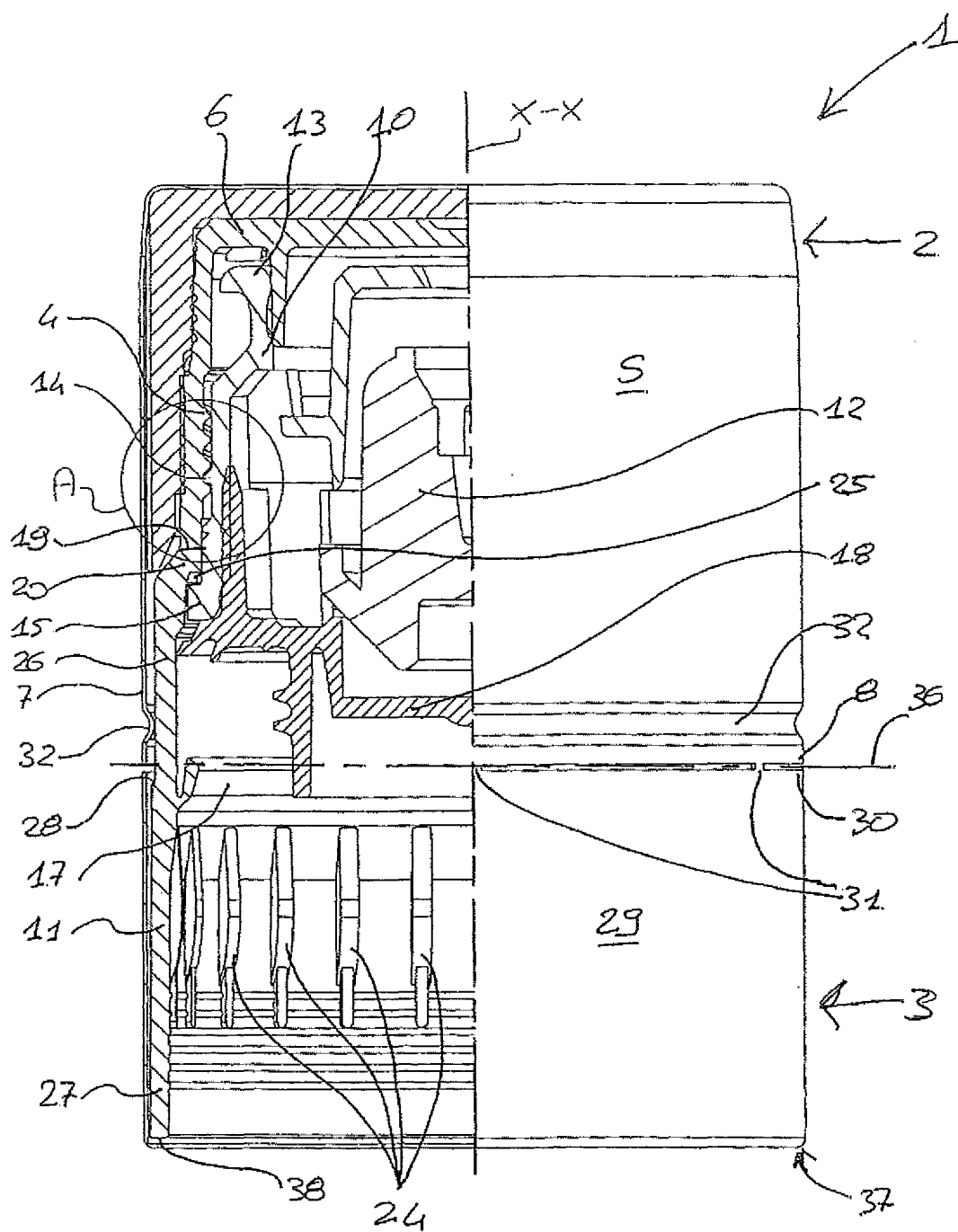


Fig. 1

Publication numbers with kind code & date

EA019762	B1	2014-06-30	EA--19762				
EP2280880	B1	2013-01-02	EP2280880				
UA99948	C2	2012-10-25	UA--99948				
EA201071005	A1	2011-10-31	EA201071005				
EP2280880	A1	2011-02-09	EP2280880				
CN201437428	U	2010-04-14	CN201437428U				
RU89496	U1	2009-12-10	RU--89496				
WO2009/106172	A1	2009-09-03	WO2009106172				
ITMI20080343	A1	2009-09-01	IT2008MI0343				
UA43478	U	2009-08-25	UA--43478U				

IPC - International classification

B65D-041/00; B65D-041/00; B65D-041/34; B65D-041/34; B65D-041/62; B65D-047/36; B65D-047/36; B65D-049/00; B65D-055/02

Abstract

(EP2280880)

The present invention relates to a tamperproof closure (1) comprising an inner portion (26) which is visible when the closure (1) is open and which can be decorated; the closure (1) can be constructed in a manner such as to reduce damage to the inner portion (26).

Inventors

ARECCO MAURO

Latest standardized assignees - inventors removed

GUALA CLOSURES

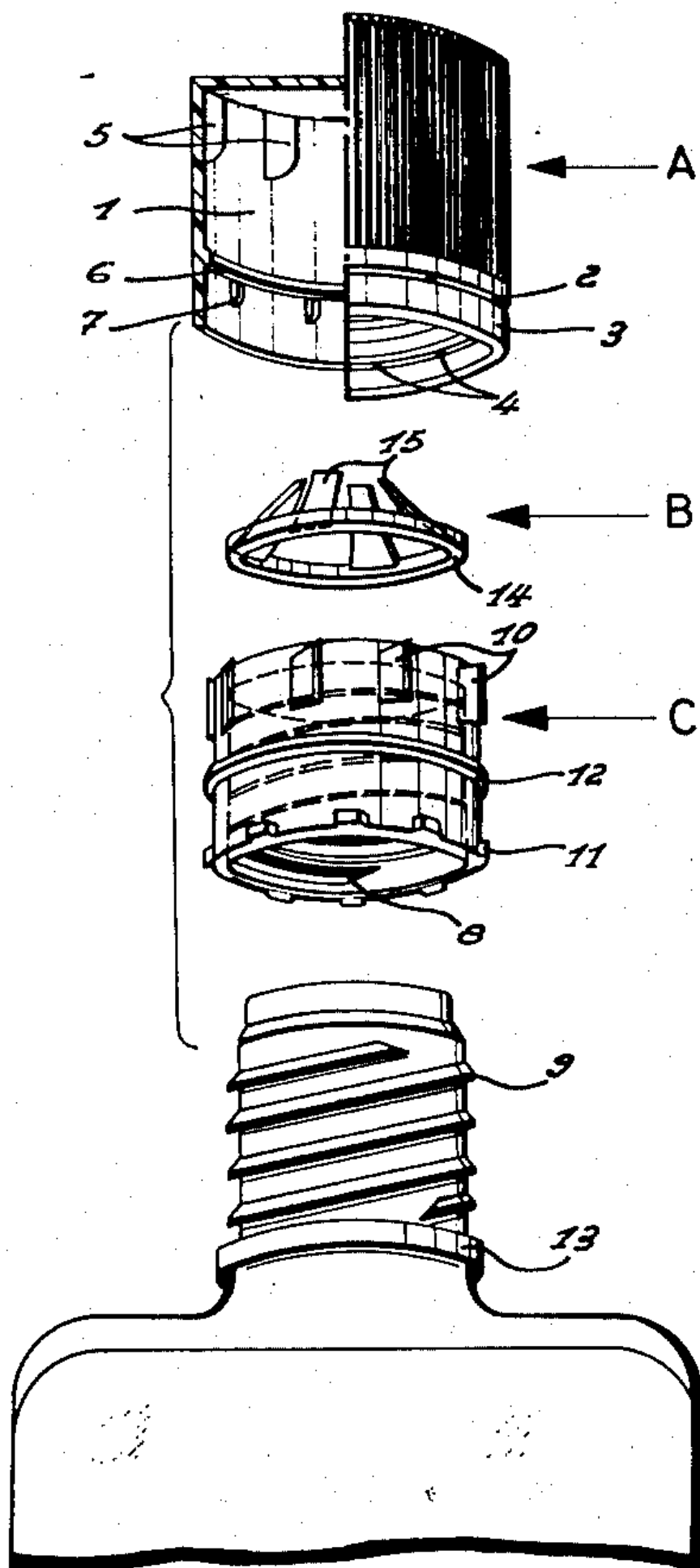
Family 25/100 - FAMPAT - ©Questel

Title

(US3968894)

Safety closure cap

Images



Publication numbers with kind code & date

IT1047264	B	1980-09-10	IT1047264
GB1515409	A	1978-06-21	GB1515409
CH583648	A5	1977-01-14	CH-583648
CH580014	A5	1976-09-30	CH-580014
US3968894	A	1976-07-13	US3968894
FR2286761	A1	1976-04-30	FR2286761
DE2543453	A1	1976-04-15	DE2543453
BE834063	A	1976-04-01	BE-834063

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US3968894)

A safety closure device for threaded neck bottles which can not be opened by young children because to open it, it is necessary to simultaneously press and turn the closure cap. The closure cap is made of two parts housed the one within the other, the outer one comprising a guarantee ring and ratching formations cooperating with ratching formations of the inner part. Driving members provided on said outer and inner parts cooperating together only when these two parts are displaced relatively against a spring means.

Inventors

HERRMANN ERNST

Latest standardized assignees - inventors removed

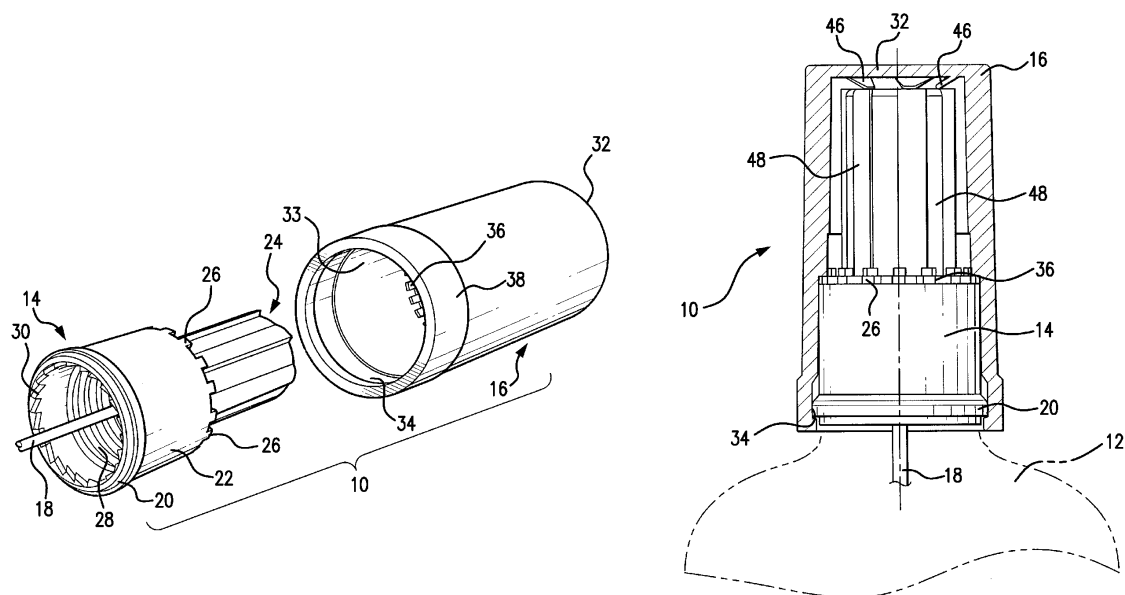
HERRMANN ERNST

Family 26/100 - FAMPAT - ©Questel

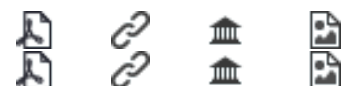
Title

(US8235616)

Safety closure for nail polish bottle

Images**Publication numbers with kind code & date**

US8235616	B2	2012-08-07	US8235616
US20110142526	A1	2011-06-16	US20110142526

**IPC - International classification**

A46B-011/00

Abstract

(US20110142526)

A molded, plastic safety closure adapted for use on a nail polish bottle. Closure includes an inner cap, and an overcap that fits over the inner cap in a telescoping manner. Inner cap includes a hollow cylindrical section, a top wall, a plurality of teeth spaced about the top wall, a post extends upwardly from said top wall, and pawls are spaced around the post. Overcap includes a plurality of complementary teeth spaced about its interior, and vanes spaced around the interior of the overcap. The two sets of teeth are normally maintained apart by spring fingers that provide an upwardly directed biasing force. When the closure is subjected to a downwardly directed force, the two sets of teeth are brought in alignment, and the vanes and pawl cooperate to provide a ratchet mechanism. The inner cap and outer cap are rotated as a unit, and provide sufficient torque to unseat the closure, and allow access to the contents of the nail polish bottle.

Inventors

RACCAH ENRICO

Family 27/100 - FAMPAT - ©Questel

Title

(WO9852841)

Safety closure and container assembly

Images

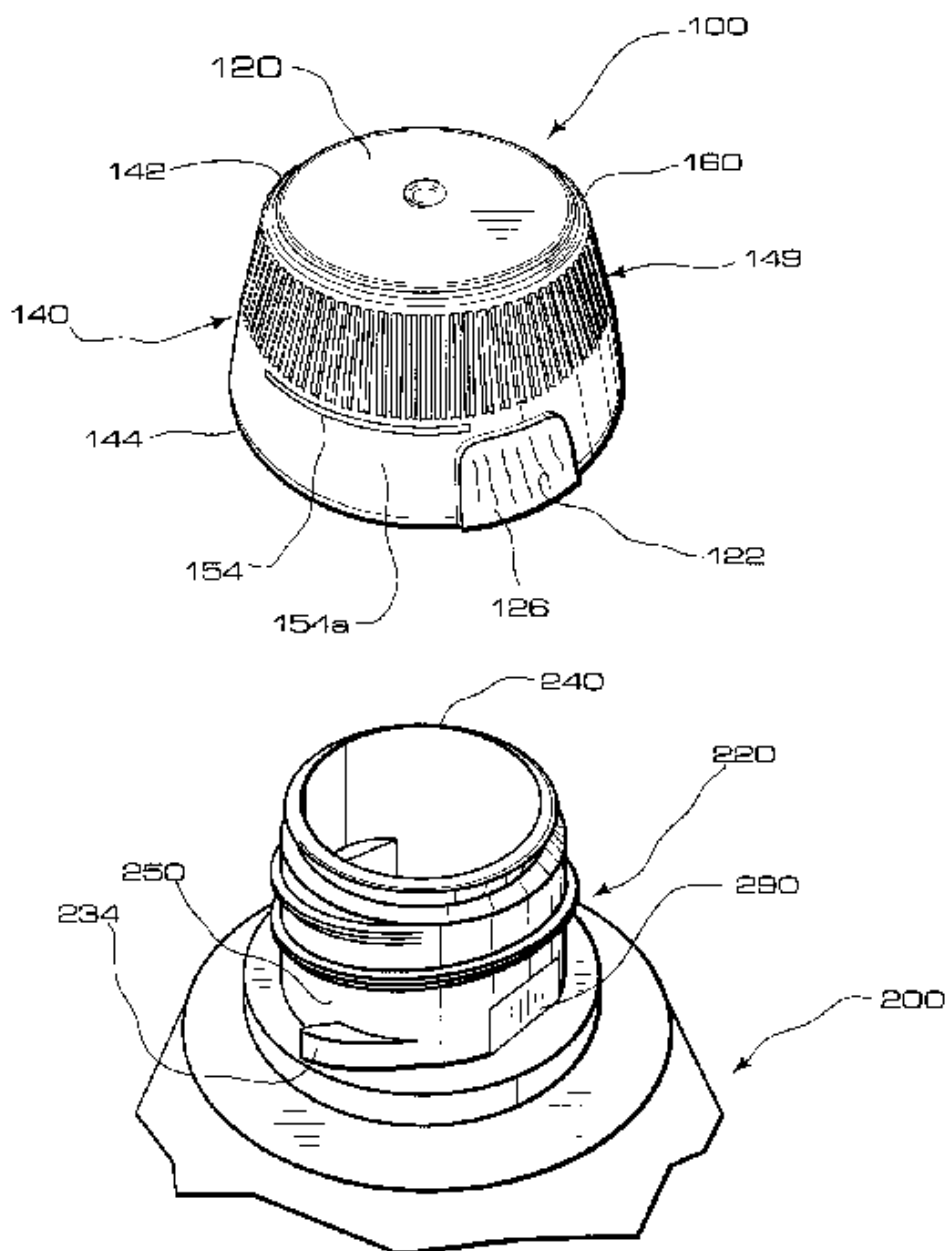
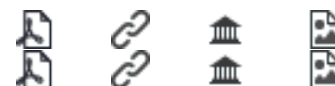


FIG. 1

Publication numbers with kind code & date

WO98/52841	A1	1998-11-26	WO9852841
US5836466	A	1998-11-17	US5836466

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(WO98/52841)

A safety closure (100) and container (200) assembly provided with a safety closure (100) having a top wall (120) and a downwardly depending annular skirt (140). A pair of opposed, inwardly projecting locking lugs (134) on the lower end of the annular skirt (140) are radially offset from the squeeze pads (122) by 90 DEG and engage locking tabs (234) on the container neck. The locking lugs are back-angled to form an interior angle of 30 DEG with the annular skirt (140). Annular

slots (154) are disposed at the axial midpoint of the annular skirt (140) and located unsymmetrically between the locking lugs (134) and the squeeze pads (122).

Inventors

BRIERE MARC A

CLODFELTER CHRISTOPHER B

SPRICK WILLIAM D

Latest standardized assignees - inventors removed

BPREX HEALTHCARE PACKAGING

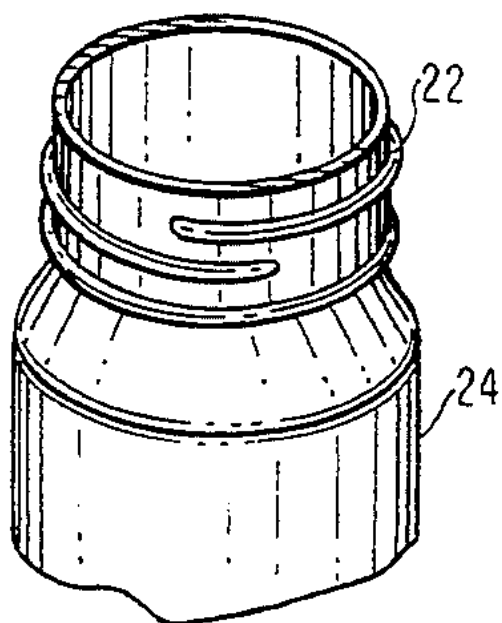
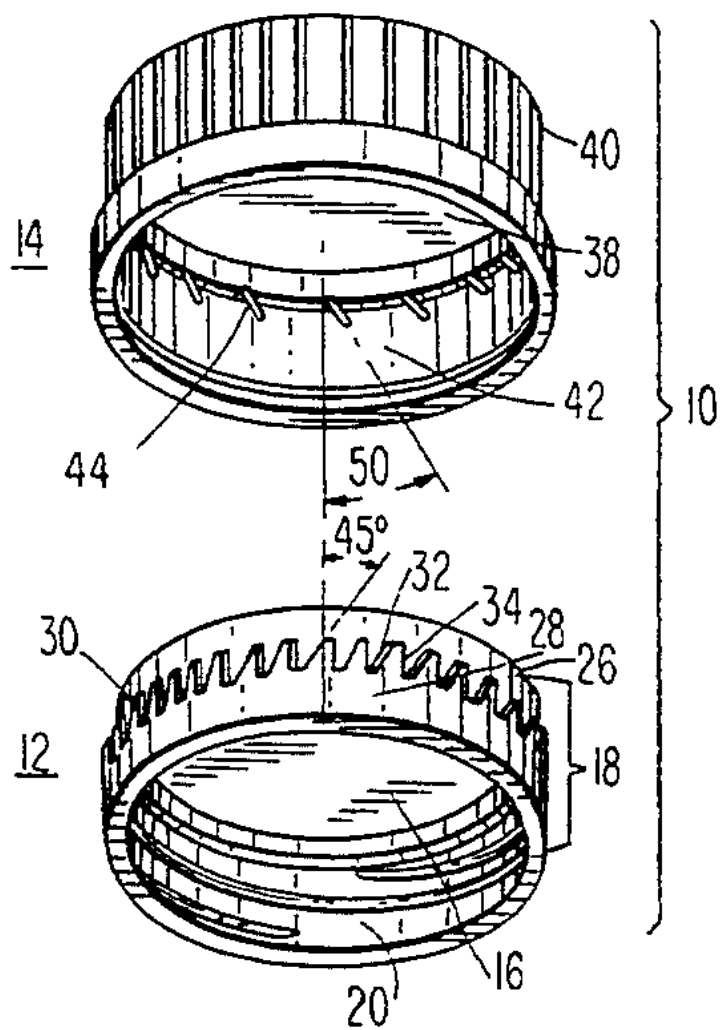
Family 28/100 - FAMPAT - ©Questel

Title

(WO9503228)

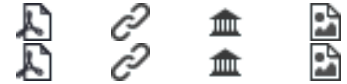
Child-resistant closure

Images



Publication numbers with kind code & date

WO95/03228	A1	1995-02-02	WO9503228
US5370251	A	1994-12-06	US5370251

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(WO95/03228)

A child-resistant closure (10) is provided with an inner cap (12) which has a plurality of triangular saw tooth projections (30) located on its outer surface (26) and an outer cap which fits over and rotates relative to the inner cap (12) and is provided with knurlings (44) located on its inner surface. The knurlings (44) of the outer cap are complementary to and angled the same way as the saw tooth projections (30) of the inner cap so that when the outer cap is rotated in the opening direction, the knurlings (44) will move freely or ratchet over the saw tooth projections (30). However, when axial force is applied to the outer cap toward the inner cap, the knurlings (44) cam against the saw toothed projections (30) causing the caps to rotate in unison and disengage from the container. Additionally, this child-resistant closure utilizes a guide on the inner surface of the outer cap to keep the inner cap in alignment with the outer cap.

Inventors

BUONO CAETANO

Latest standardized assignees - inventors removed

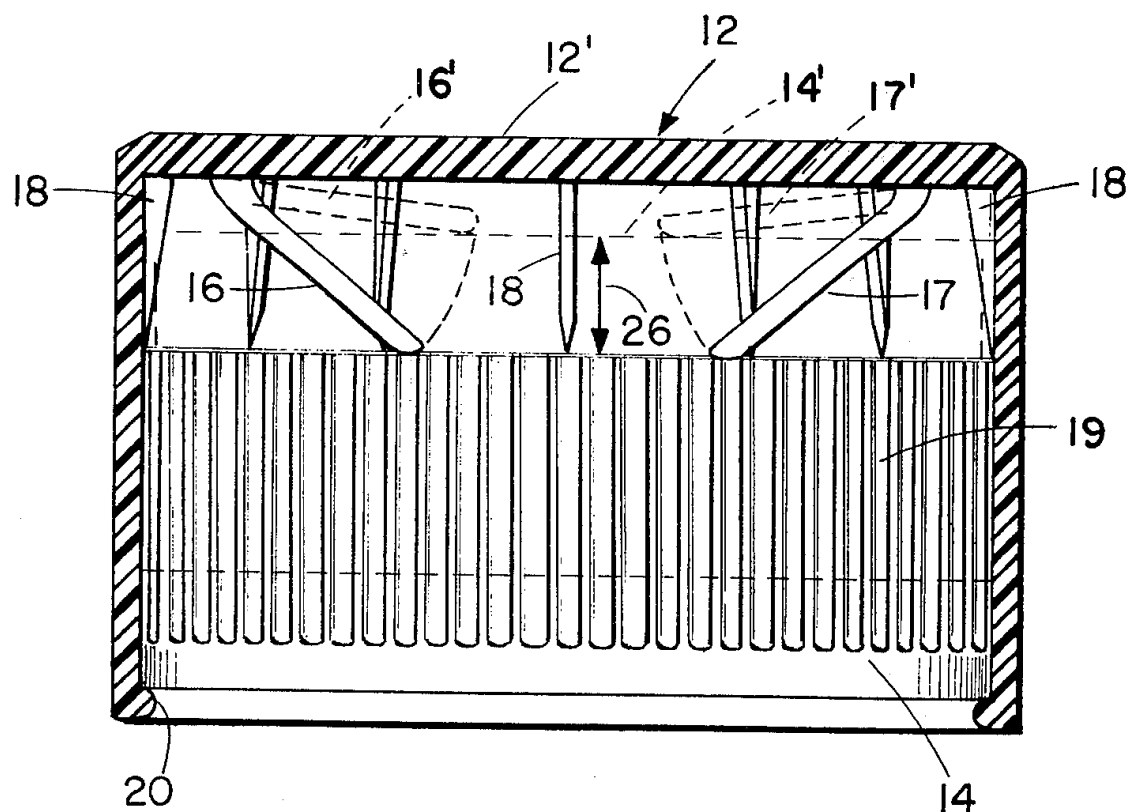
VAN BLARCOM CLOSURES

Family 29/100 - FAMPAT - ©Questel

Title

(US3887099)

Container safety closure

Images**Publication numbers with kind code & date**

US3887099	A	1975-06-03	US3887099
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**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US3887099)

This invention relates to a safety closure for container bottles, etc., wherein the closure is provided with an inner cap adapted to be threadably receivable on the apertured neck of the container for closing the aperture, and an outer cap that is adapted to normally rotate freely about the inner cap when the top portions of the respective caps are separated a predetermined distance, and to engage each other when the top portions are moved toward each other whereby the inner cap is engaged by a plurality of splines causing the inner cap to rotate with the outer cap.

Inventors

GILLMAN ROBERT N

KOEHNE ANTHONY J

BAUGHAN III HARRY O

Latest standardized assignees - inventors removed

POLY SEAL

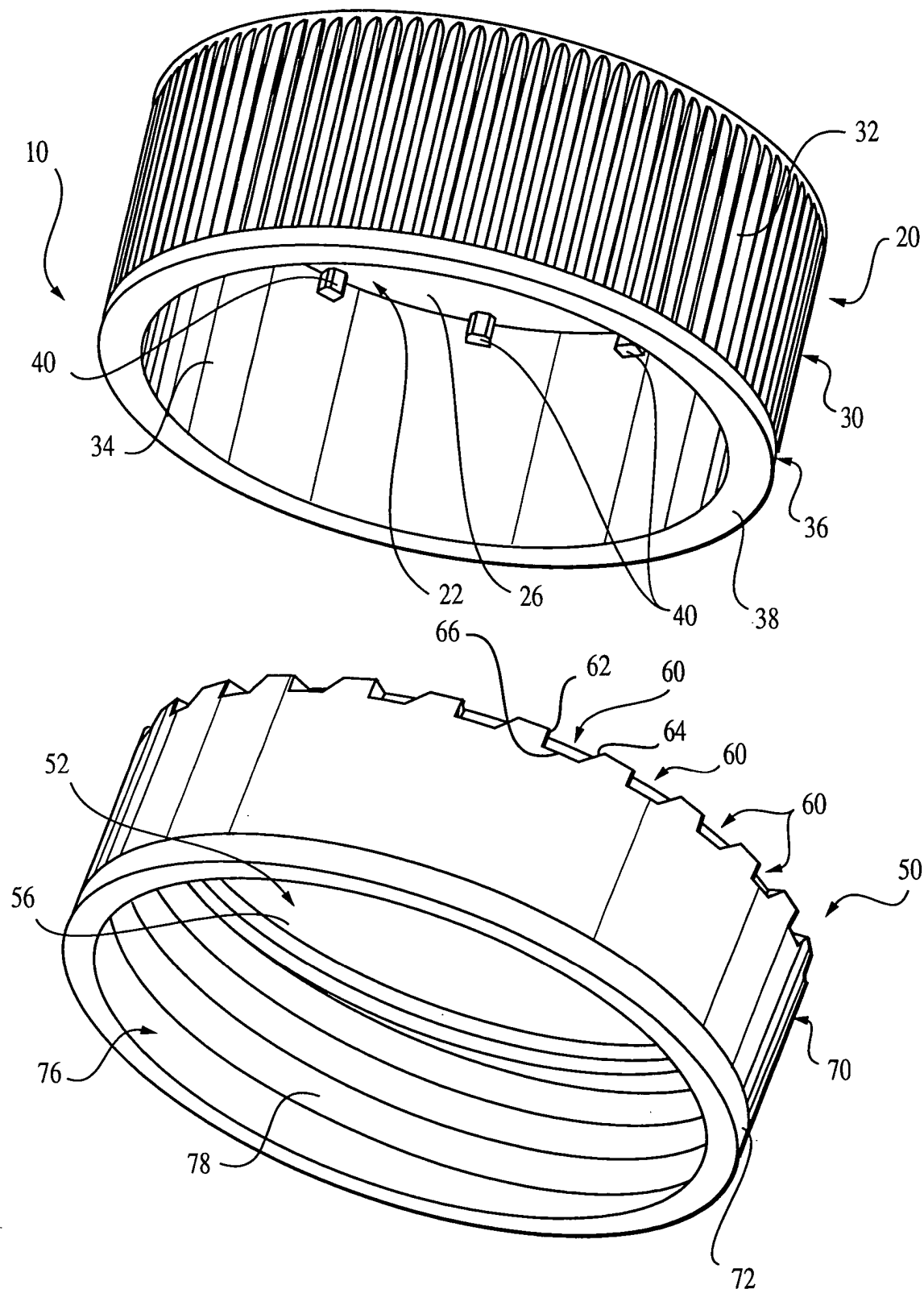
Family 30/100 - FAMPAT - ©Questel

Title

(US20040262251)

Palm and turn child resistant closure

Images



Publication numbers with kind code & date

[US20040262251](#)

A1 2004-12-30

US20040262251



IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US20040262251)

A safety closure having an outer cap and an inner cap being rotatably received by the outer cap is disclosed. The outer cap includes a top wall having a plurality of lugs formed thereon. The inner cap includes a top wall and a cylindrical skirt depending therefrom. The inner cap includes a plurality of lug receiving recesses formed at an intersection of the top wall

and cylindrical skirt. The recesses have at least one vertical wall and at least one inclined wall. The lugs of the outer cap engage the vertical walls, and are received by the recesses, only when the outer cap is turned in a closure application direction, causing the closure to be applied to a container. The inclined walls of the recesses act on the lugs to prevent the lugs from being received in the recesses until a downward force is applied to the outer cap. When the downward force is applied to the outer cap and the outer cap is simultaneously turned in the closure opening direction, the lugs will engage the inclined walls and remain received by the recesses, allowing the inner cap to be rotated and removed from the container.

Inventors

TAUBER JOHN

Latest standardized assignees - inventors removed

BERRY PLASTICS

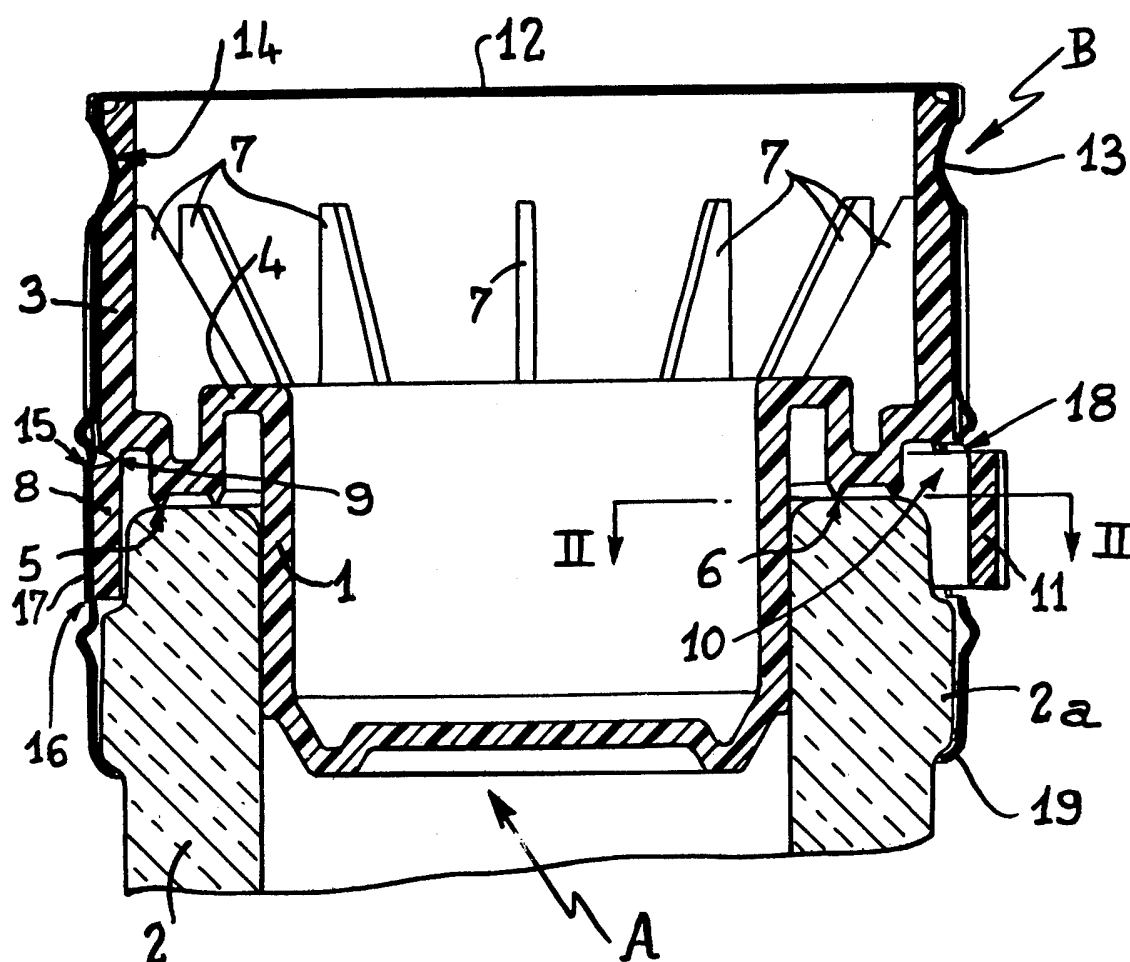
Family 31/100 - FAMPAT - ©Questel

Title

(US4084719)

Security closures

Images



Publication numbers with kind code & date

IT1203064	B	1989-02-15	IT1203064
JPS5730281	Y2	1982-07-02	JP57030281Y
IE44625	B1	1982-01-27	IE--44625
AU504443	B2	1979-10-11	AU-504443
CA1060845	A	1979-08-21	CA1060845
AR214066	A1	1979-04-30	AR-214066
GR61202	B	1978-10-06	GR--61202



NZ183470	A	1978-09-25	NZ-183470				
AU2307077	A	1978-09-14	AU7723070				
PT66204	B	1978-08-12	PT--66204				
GB1514447	A	1978-06-14	GB1514447				
CH598074	A5	1978-04-28	CH-598074				
US4084719	A	1978-04-18	US4084719				
BR7701531	A	1978-01-03	BR7701531				
JPS52123057	U	1977-09-19	JP52123057U				
NO770919	L	1977-09-19	NO-770919				
DK112477	A	1977-09-17	DK7701124				
FI770755	A	1977-09-17	FI7700755				
SE7702647	A	1977-09-17	SE7702647				
ES227161	Y	1977-09-16	ES-227161Y				
IE44625	L	1977-09-16	IE4400625				
LU76946	A1	1977-07-14	LU--76946				
DE7707454	U1	1977-06-23	DE7707454				
ES227161	U	1977-05-01	ES-227161U				
PT66204	A	1977-03-01	PT--66204				

IPC - International classification

B65D-041/58; B65D-041/58; B65D-051/18

Abstract

(US4084719)

A security closure for a container, comprises a capsule, and a stopper including a tearstrip having a free end which in use passes through an opening in the capsule, the opening having a width greater than its height. The capsule has two lines of weakness which are aligned with the longitudinal edges of the tearstrip.

Inventors

COURSAT-DURAND HENRI

Latest standardized assignees - inventors removed

BOUCHAGE MECANIQUE

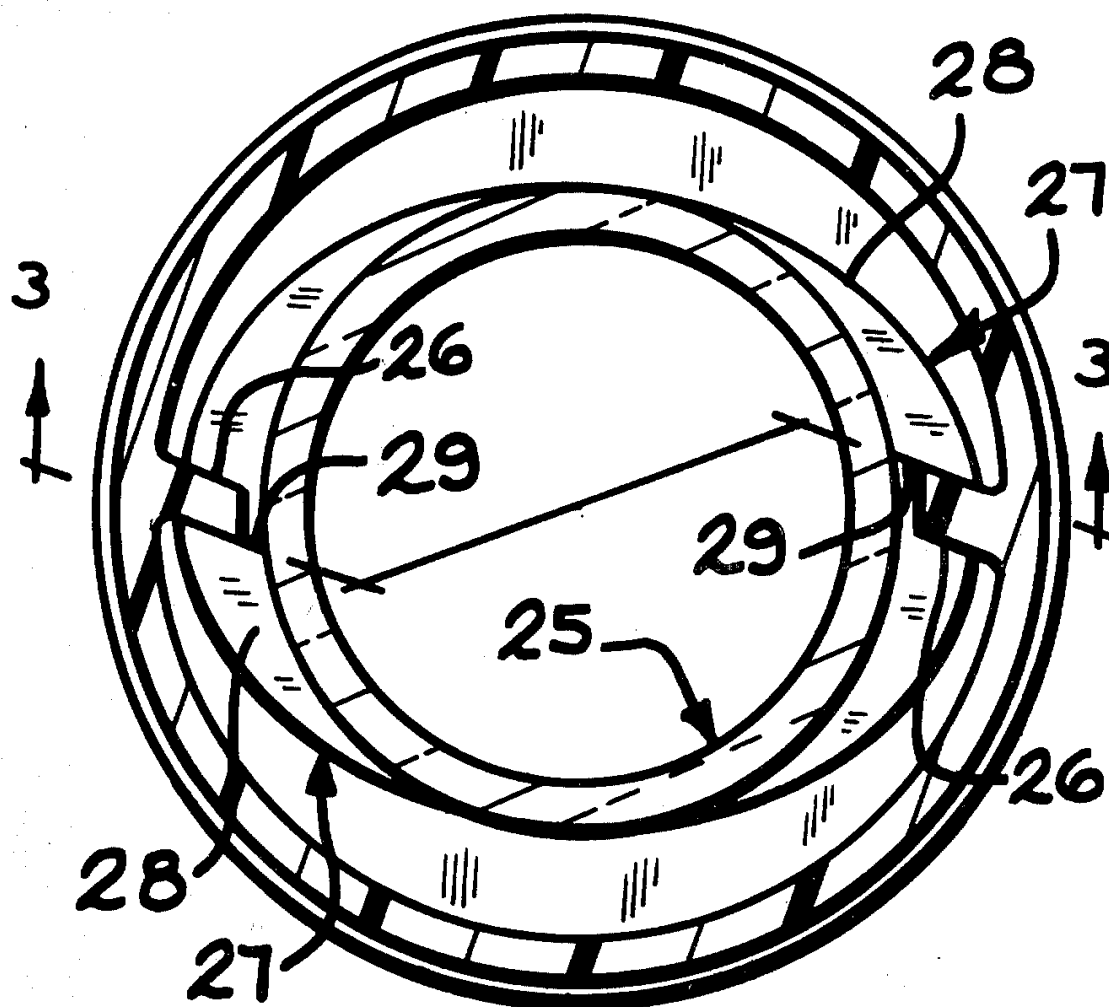
Family 32/100 - FAMPAT - ©Questel

Title

(US4213534)

Child-resistant closure

Images



Publication numbers with kind code & date

[US4213534](#)

A

1980-07-22

US4213534



IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US4213534)

A container having a tubular neck and a cup-shaped cap, the container and cap having twist action retaining means such as cooperating threads, in which the container and the cap also have child-resistant locking means. The child-resistant locking means consist of at least one set of co-operating stop and lug, preferably two each. When the cap is turned onto the neck to closed position, that one of the stop or lug on the cap is turned clockwise beyond engagement. The stop has a lug engaging abutment face which is inclined backwardly from its outer edge in a counterclockwise direction. When the cap is turned in retrograde direction toward opening, and the lug engages the abutment face it is urged radially inwardly to more strongly resist unscrewing the cap. The stop and lug are disengageable by radially outwardly deforming the portion of the cap on which one of the stop or lug is formed.

Inventors

MONTGOMERY GARY V

Latest standardized assignees - inventors removed

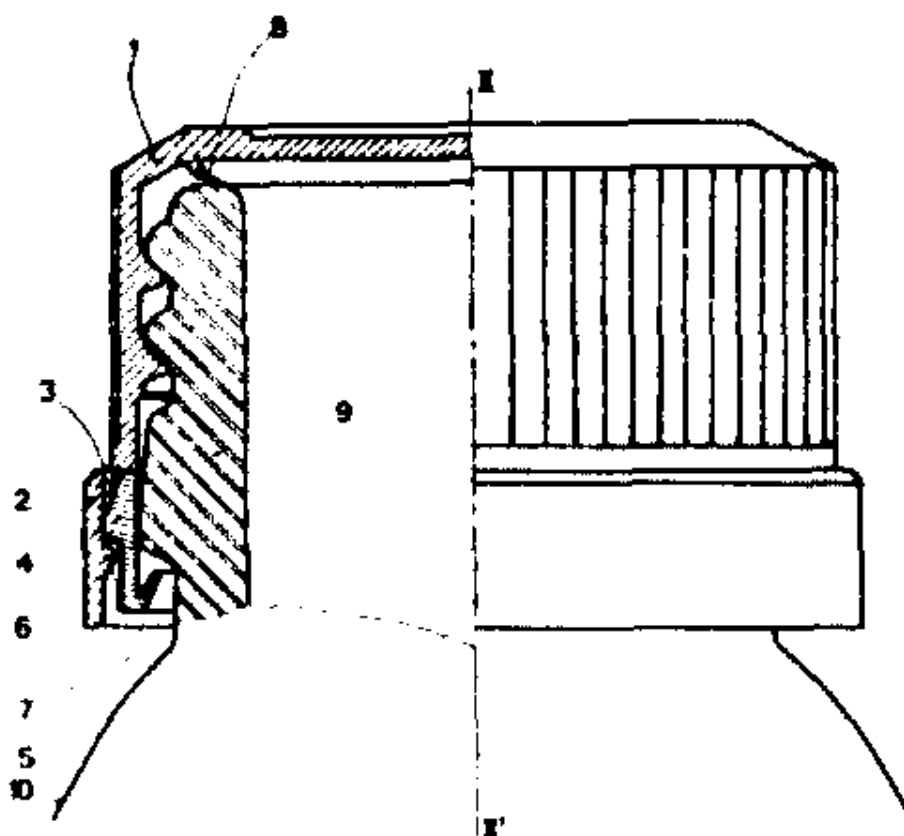
SUNBEAM PLASTICS

Family 33/100 - FAMPAT - ©Questel

Title

(FR2490598)

Plastic tamper proof stopper - comprises two parts screwed together with gripping ring rupturing weakened zone on unscrewing

Images**Publication numbers with kind code & date**

FR2490598	B1	1984-10-19	FR2490598
FR2490598	A1	1982-03-26	FR2490598

**IPC - International classification**

B65D-041/34; B65D-041/34

Abstract

(FR2490598)

The tamper proof stopper is for a ring type threaded neck of a container. It has two parts of plastics material one of which is a capsule with the upper part threaded (1). The lower part (3) is jointed to the upper by a zone of weakened resistance. A ring (4) is snapped on to the lower part of the capsule. The ring has a flexible retainer gripping below the ring when unscrewed and causing rupture of the weakened zone when first unscrewed. The flexible facility is formed by a lip sloped (5) towards the capsule base.

Inventors

COURSAUT-DURAND HENRI

Latest standardized assignees - inventors removed

CEBAL

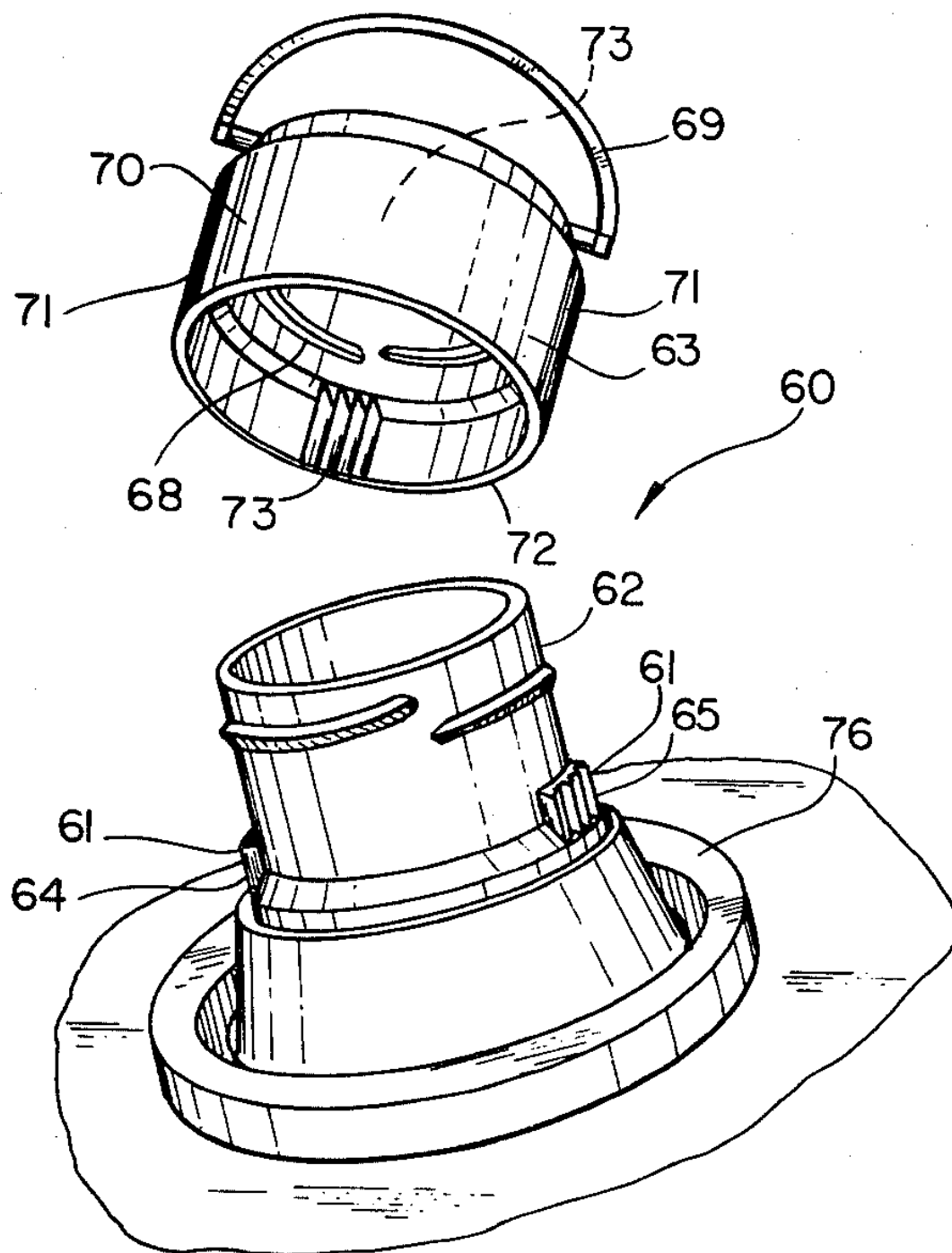
Family 34/100 - FAMPAT - ©Questel

Title

(US4413743)

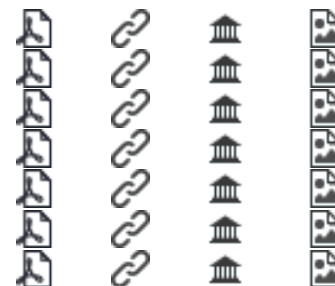
Child-resistant safety closure

Images



Publication numbers with kind code & date

DE3216229	C2	1991-02-28	DE3216229
FR2515145	B1	1987-07-10	FR2515145
GB2108095	B	1986-03-12	GB2108095
US4413743	A	1983-11-08	US4413743
DE3216229	A1	1983-06-30	DE3216229
GB2108095	A	1983-05-11	GB2108095
FR2515145	A1	1983-04-29	FR2515145



IPC - International classification

B65D-050/04; B65D-050/04; B65D-055/02

Abstract

(US4413743)

A child-resistant safety container for preventing access to the contents by small children and infants includes a positive-on closure concept and necessitates a two-step release procedure in order to remove the cap from the container spout. The

closure cap includes an internally threaded side wall with a pair of inwardly protruding lug means. The internally threaded cap is suitably adapted for receipt by an externally threaded container spout. Disposed in combination with the container spout are sawtooth detent means including two series of ratchet teeth which are spaced approximately 180 degrees apart. These ratchet teeth are suitably sized and arranged for interlocking engagement with the inwardly protruding lug means. However, one series of ratchet teeth are offset from the other series by a half ratchet tooth spacing so that the engagement of the locking lugs with the ratchet teeth alternates from one locking lug to the other with each angular turn equal to a half ratchet tooth. The ratchet teeth have an axial height which is sufficient to prevent removal of the cap with one 180-degree turn. In order to remove the cap from the container spout, it is required that the closure cap be distorted into an elliptical shape and two turns of approximately 180 degrees each be performed.

Inventors

SUMMERS KENNETH L

Latest standardized assignees - inventors removed

METALDYNE

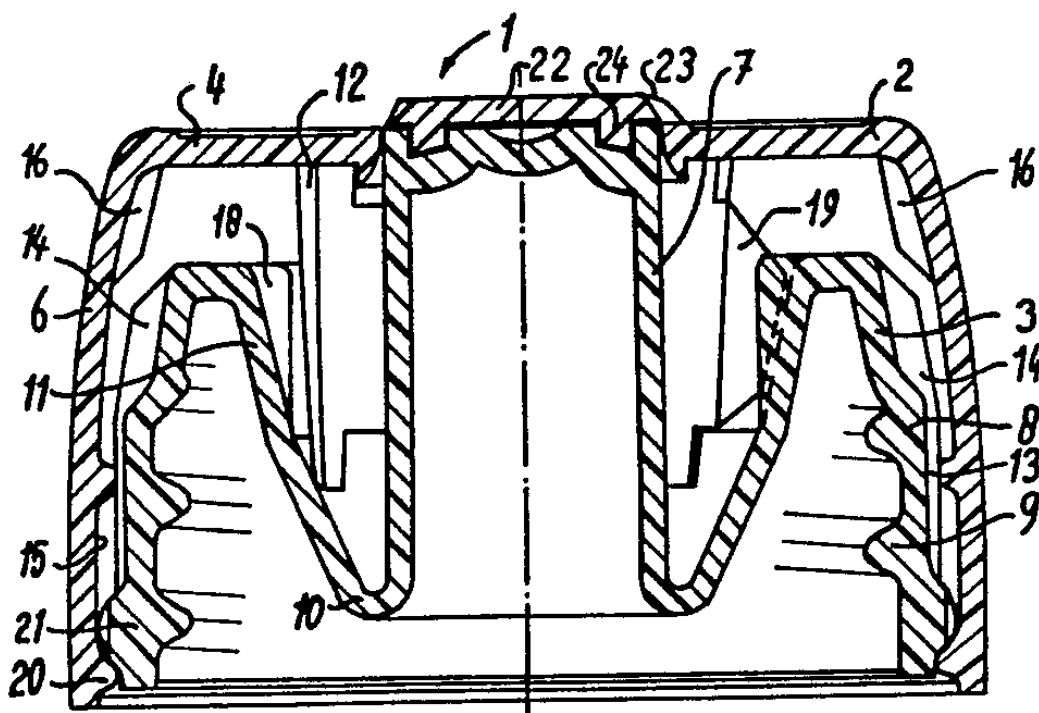
Family 35/100 - FAMPAT - ©Questel

Title

(EP-164154)

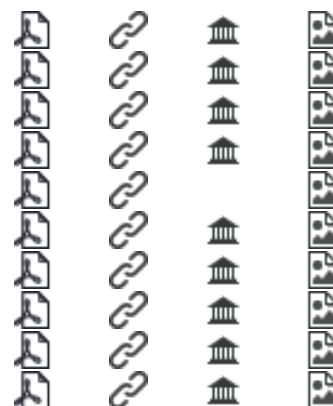
Safety closure

Images



Publication numbers with kind code & date

EP0164154	B2	1993-04-07	EP-164154
DK160240	C	1991-08-12	DK-160240C
DK160240	B	1991-02-18	DK-160240
DE3572639	D1	1989-10-05	DE3572639
AT45923	T	1989-09-15	ATE045923
EP0164154	B1	1989-08-30	EP-164154
AU579153	B2	1988-11-17	AU-579153
EP0164154	A3	1987-09-09	EP-164154
EP0164154	A2	1985-12-11	EP-164154
US4555036	A	1985-11-26	US4555036



AU4207285	A	1985-11-14	AU8542072
DE3417184	A1	1985-11-14	DE3417184
DK202385	A	1985-11-10	DK8502023
DK202385	D0	1985-05-07	DK8502023



IPC - International classification

B65D-050/04; B65D-050/04; B65D-055/02; B65D-055/02

Abstract

(EP0164154)

A safety closure, particularly safe in the hands of children, to safety close containers composed of an assembly of an inner cap (3) and an outer cap (2), the inner cap (3) provided with threading (9) for screwing onto the mouth of a container. The outer cap (2) can be depressed over the inner cap (3) against a resilient force provided by lips (12) coating with a conical surface. When depressed, teeth (16) on the outer cap (2) mesh with teeth (14) on the inner cap (3) to effect unscrewing of the closure. A ratchet provided by teeth (18) on the inner cap (3) cooperating with tangential protrusions (19) on the outer cap (2) enable onscreening of the closure but prevent offscreening. A guarantee seal (22, 23) may be provided, ruptured automatically on depressing the outer cap (2), and also, if desired, on rotation of the outer cap (2) in the offscreening direction.

Inventors

BEKKERS, HENRICUS ANTONIUS MARIA

REYENGA, TJERK

Latest standardized assignees - inventors removed

TECHNOPLAST

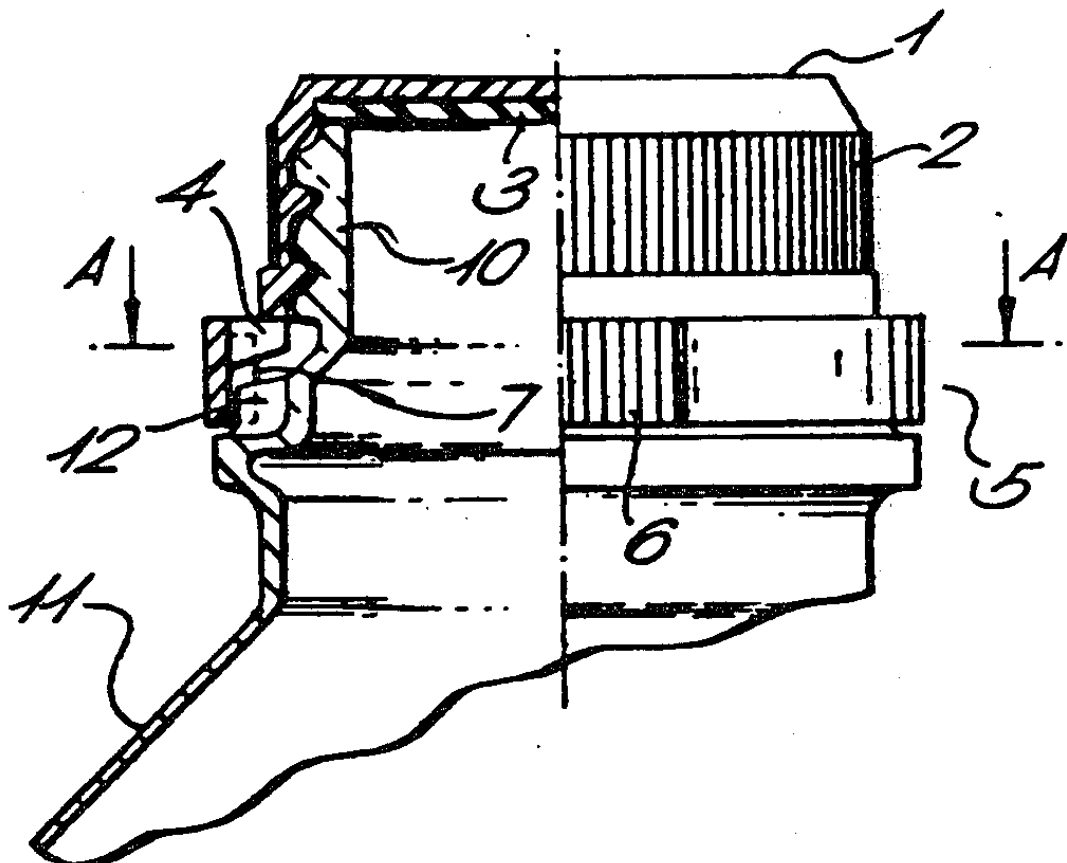
Family 36/100 - FAMPAT - ©Questel

Title

(US4345690)

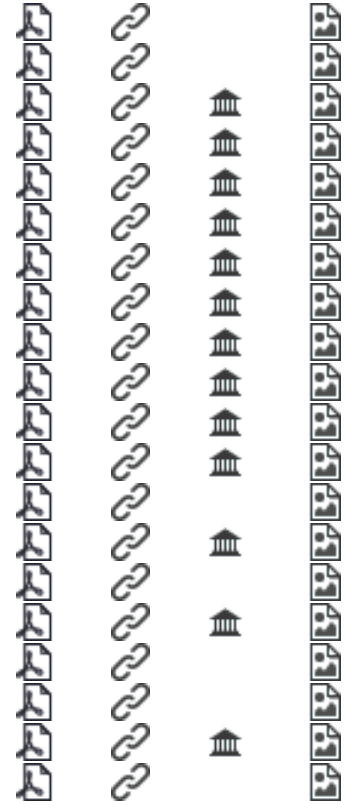
Safety closure

Images



Publication numbers with kind code & date

NL178239	C	1986-02-17	NL-178239
NL178239	B	1985-09-16	NL-178239
IE47346	B1	1984-02-22	IE--47346
FR2403276	B1	1984-01-06	FR2403276
US4345690	A	1982-08-24	US4345690
GB2004527	B	1982-01-13	GB2004527
AU518217	B2	1981-09-17	AU-518217
NZ188431	A	1981-03-16	NZ-188431
AU3991778	A	1980-03-20	AU7839917
FR2403276	A1	1979-04-13	FR2403276
GB2004527	A	1979-04-04	GB2004527
DE2840761	A1	1979-03-29	DE2840761
NL7809477	A	1979-03-21	NL7809477
DK410778	A	1979-03-20	DK7804107
FI782850	A	1979-03-20	FI7802850
NO783146	L	1979-03-20	NO-783146
SE7809635	A	1979-03-20	SE7809635
IE781839	L	1979-03-19	IE7801839
BE870479	A	1979-03-14	BE-870479
LU80233	A1	1979-03-07	LU--80233



IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US4345690)

There is described a container and a closure cap therefor, wherein the neck of the container is screw-threaded and is provided with at least one lug beneath the screw thread, the closure cap comprising a top, a screw-threaded depending skirt and an annular band attached to the skirt by spaced bridges, the annular band being provided with one or more fins adapted to engage the lug(s) on the container neck, the annular band being deformable by radial pressure at positions spaced from the fin(s) to increase the diameter of the band in the region of the fin(s) such that the fin(s) do not engage the lug(s) on the container neck.

Inventors

HOPLEY ERIC T

Latest standardized assignees - inventors removed

CMB PACKAGING

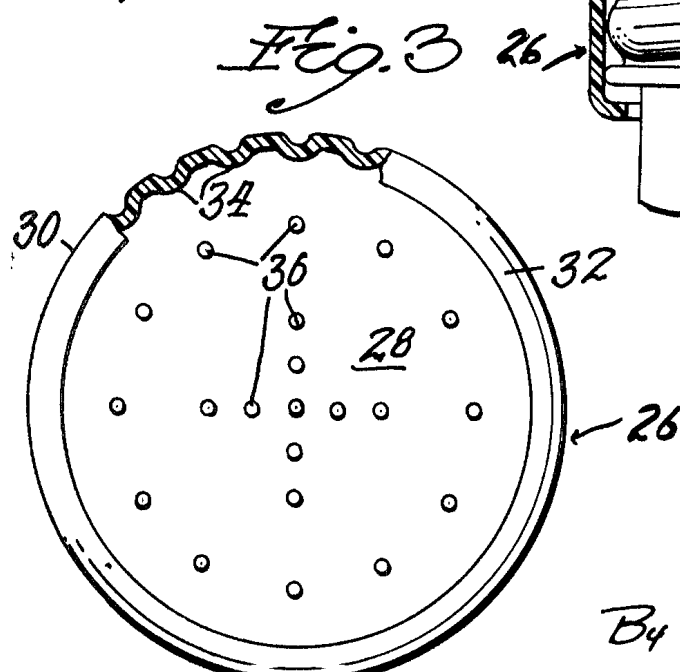
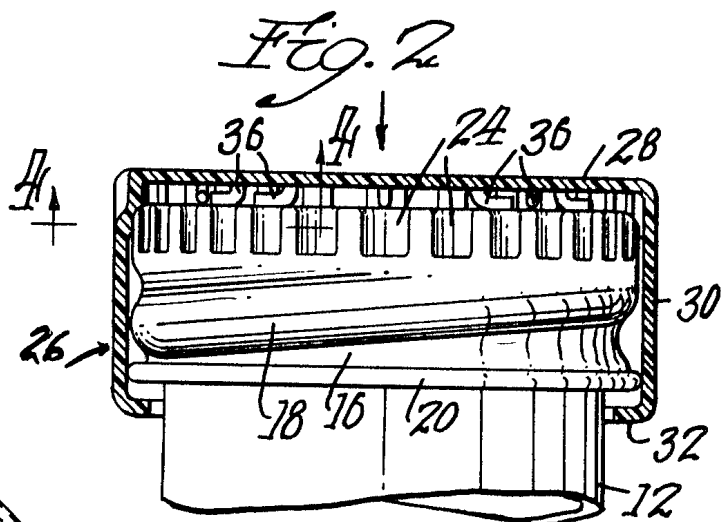
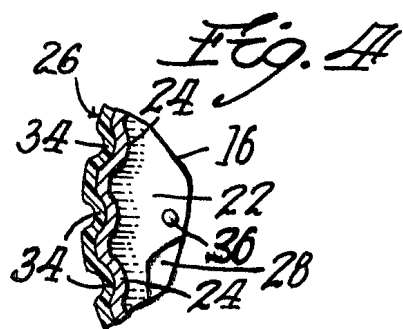
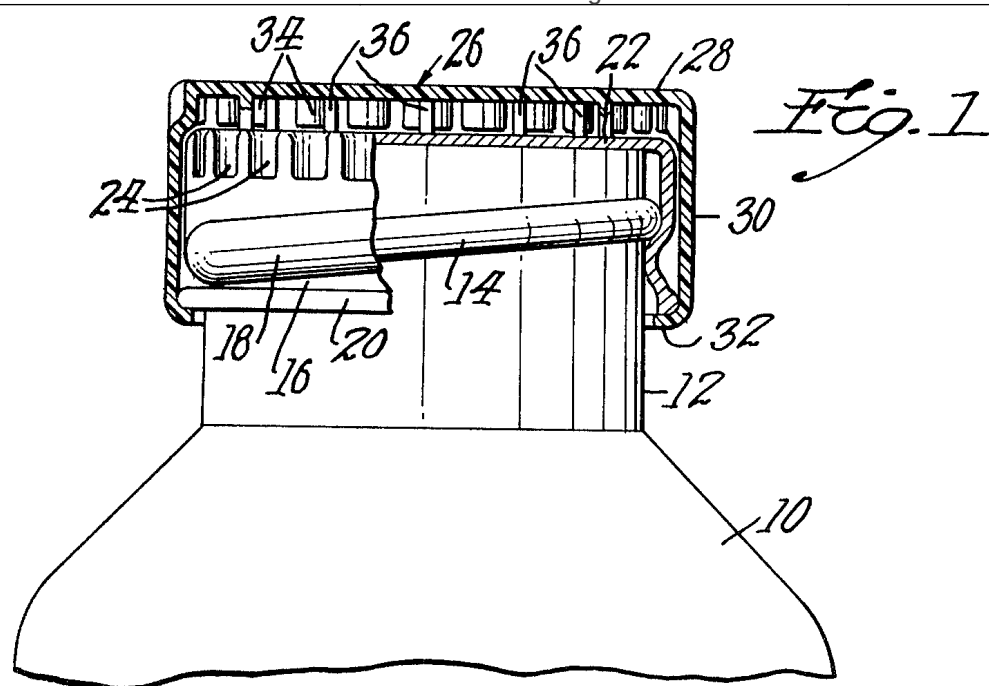
Family 37/100 - FAMPAT - ©Questel

Title

(US3622027)

Safety bottle closure

Images



Inventor
Eino J. Maki
By Charles R. Fay,

Publication numbers with kind code & date

US3622027

A 1971-11-23

US3622027

IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US3622027)

A closure cap generally of the screw-on type having exterior knurls at the periphery thereof, in combination with a safety

overcap having complementary interior knurls and including yieldable, resilient interior filaments or pins maintaining the overcap rotarily unengaged with respect to said closure cap, but said knurls engaging upon the application of downward pressure on the safety overcap relative to the closure cap.

Inventors

MAKI EINO J

Latest standardized assignees - inventors removed

STERLING DRUG

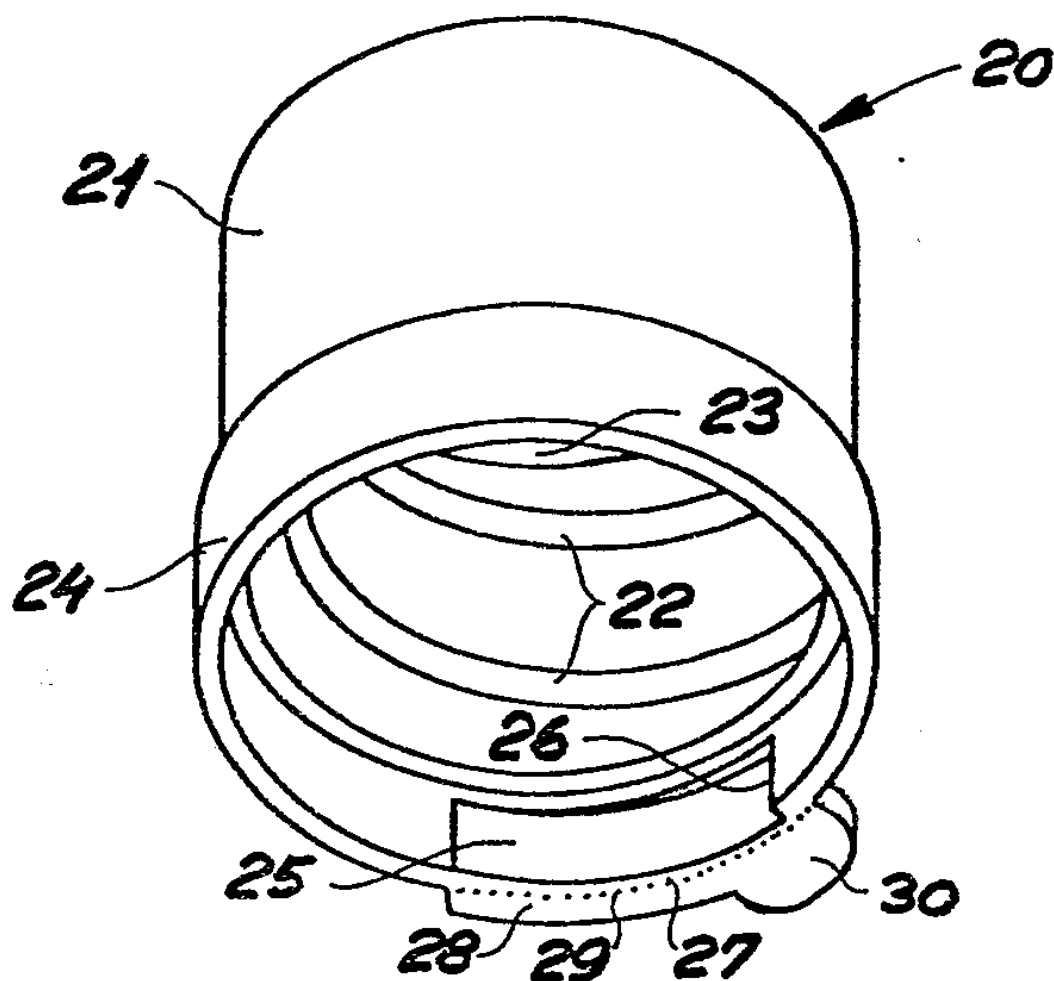
Family 38/100 - FAMPAT - ©Questel

Title

(EP--98722)

A safety closure

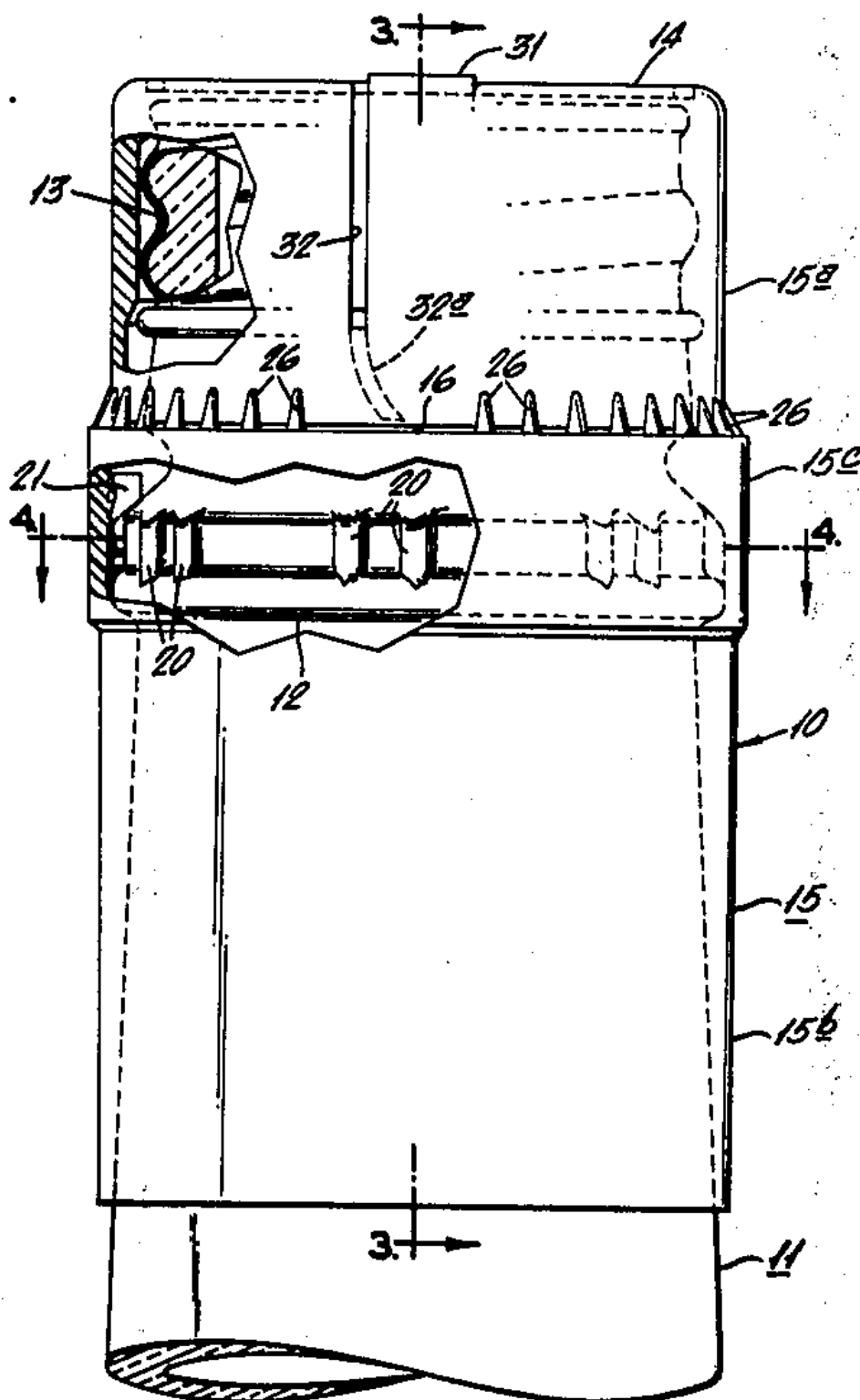
Images



Publication numbers with kind code & date

FI76037	C	1988-09-09	FI--76037
FI76037	B	1988-05-31	FI--76037
DE3375384	D1	1988-02-25	DE3375384
EP0098722	B1	1988-01-20	EP--98722
CA1227457	A	1987-09-29	CA1227457
NO154665	C	1986-11-26	NO-154665
NO154665	B	1986-08-18	NO-154665
DK147510	C	1985-03-04	DK-147510C
EP0098722	A3	1985-01-09	EP--98722
DK147510	B	1984-09-10	DK-147510





Publication numbers with kind code & date

FR2247395	B3	1977-07-22	FR2247395
US3901403	A	1975-08-26	US3901403
FR2247395	A1	1975-05-09	FR2247395



IPC - International classification

B65D-041/62; B65D-041/62

Abstract

(US3901403)

A bottle having a finish with a ribbed annular protrusion is provided with a molded plastic seal having internal surfaces which cooperate with the protrusion to prevent the seal from being disengaged from the bottle without being destroyed. The

seal is weakened at predetermined circumferential locations, and an integral finger grip is provided for rupturing the seal at the weakened locations to separate the seal from the bottle when the finger grip is displaced circumferentially.

Inventors

MENKE EUGENE W

Latest standardized assignees - inventors removed

WEST

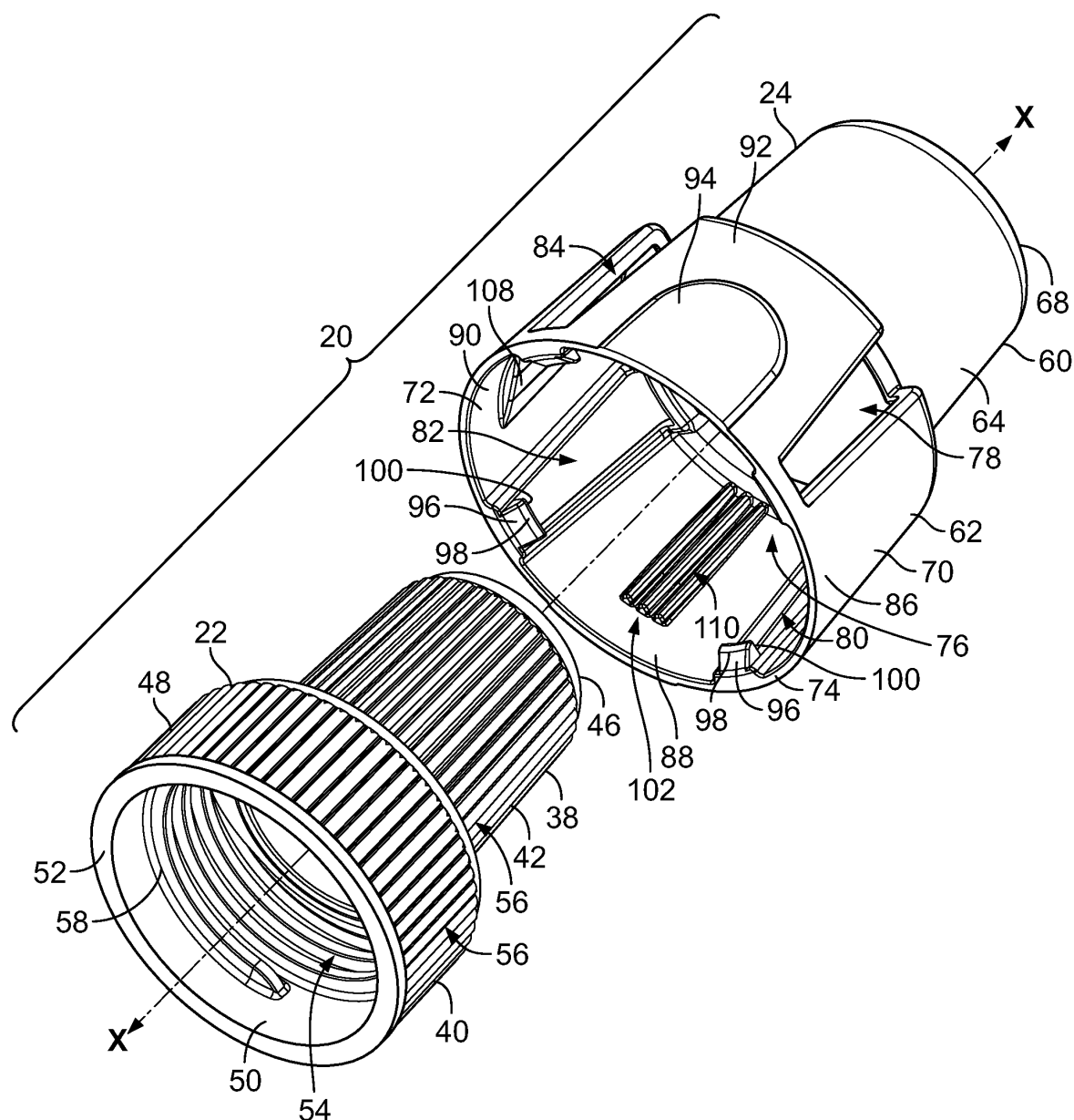
Family 40/100 - FAMPAT - ©Questel

Title

(EP3237296)

Squeeze and turn child resistant closure attachment

Images



Publication numbers with kind code & date

CN107108080	B	2019-03-08	CN107108080B
US9975673	B2	2018-05-22	US9975673
EP3237296	A1	2017-11-01	EP3237296
CN107108080	A	2017-08-29	CN107108080
WO2016/105682	A1	2016-06-30	WO2016105682
US20160176590	A1	2016-06-23	US20160176590



IPC - International classification

B65D-041/04; B65D-041/04; B65D-043/18; B65D-050/04; B65D-050/04; B65D-085/00; B65D-085/82

Abstract

(EP3237296)

A cap-locking assembly (20) includes an inner cap (22) having a ribbed outer surface and a locking cap (24). The locking cap includes opposing first and second engagement mechanisms(102, 104), opposing first and second stabilizing ridges (106, 108), and a plurality of ramped tabs (96), all of which are disposed on the interior surface of the locking cap. When the ramped tabs engage a lower edge of the inner cap they retain the inner cap inside the locking cap. Further, the opposing first and second stabilizing ridges coaxially align the inner cap and the locking cap. Finally, the opposing first and second engagement mechanisms engage with the ribbed outer surface (48) of the inner cap upon application of an inward force to the locking cap.

Inventors

PRATER RODNEY L

ADAIR JOEL E

NICKEL DIRK K

GEBHARDT JASON R

Latest standardized assignees - inventors removed

OPTIMAL DESIGN

JOHNSON & SON

Family 41/100 - FAMPAT - ©Questel

Title

(US3445022)

Childproof safety container and closure

Images

FIG. 2

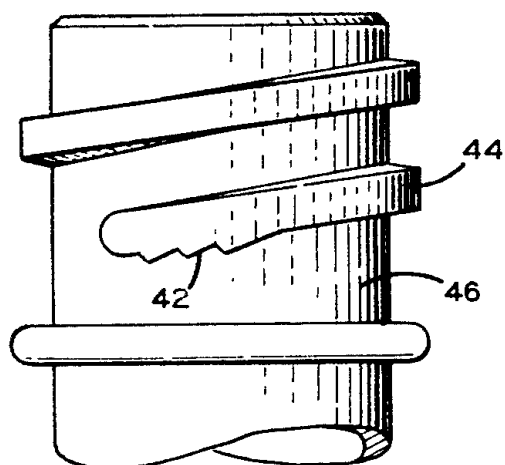


FIG. 3

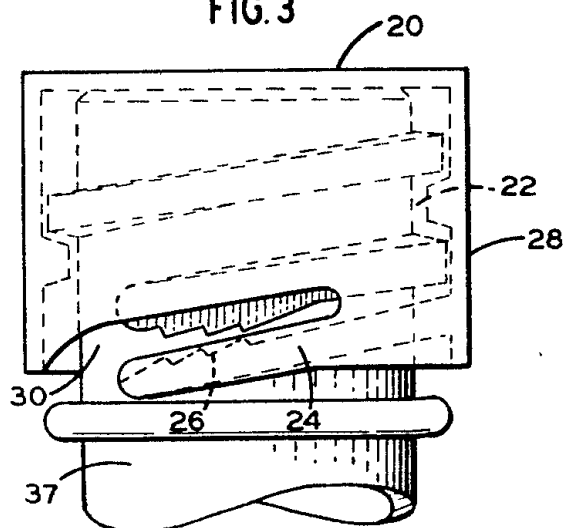


FIG. 1

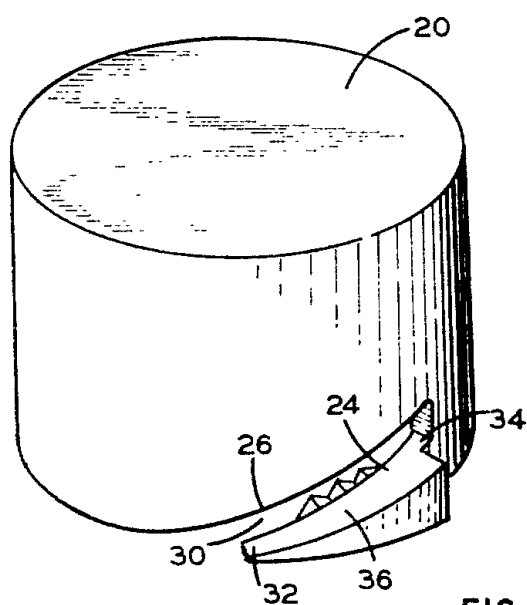


FIG. 4

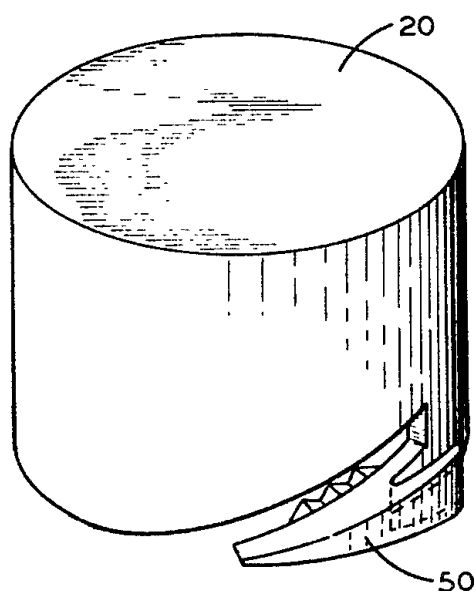
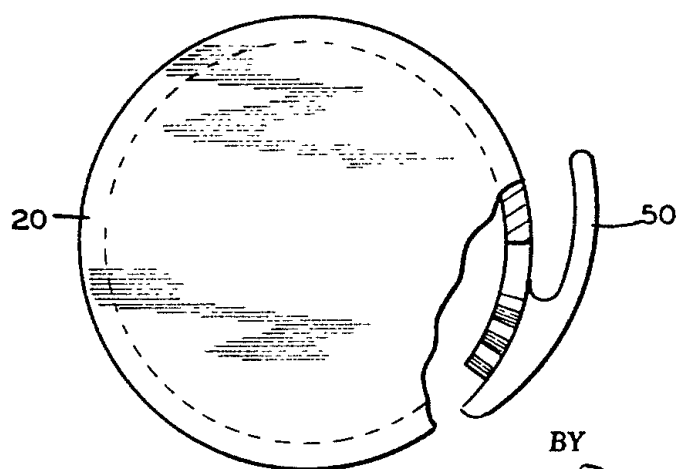


FIG. 5



INVENTOR.

Frank A. Cilluff

BY

ATTORNEY

Publication numbers with kind code & date

US3445022

A 1969-05-20

US3445022

IPC - International classification

B65D-050/04; B65D-050/04



Inventors

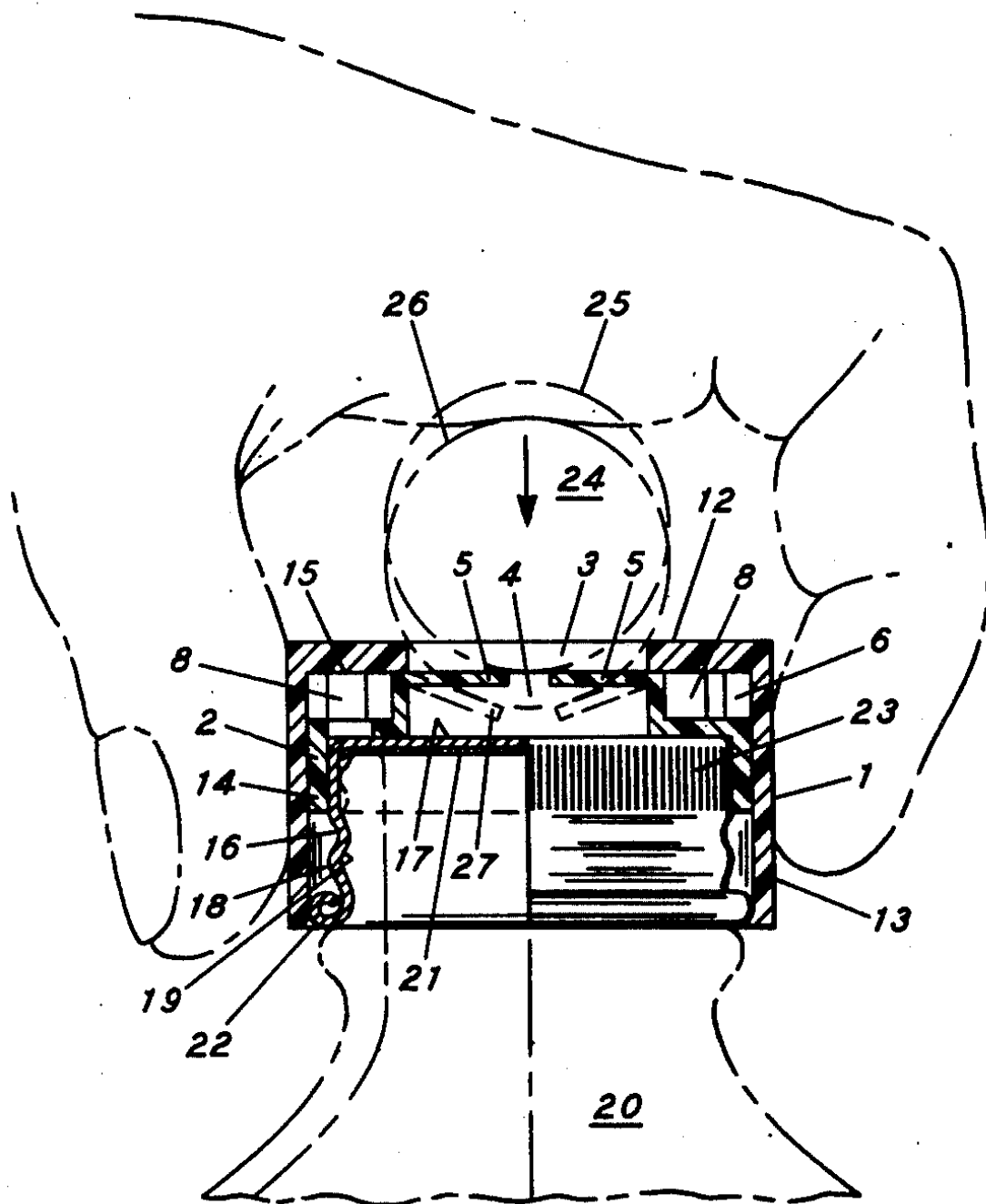
CILLUFFO FRANK A

Family 42/100 - FAMPAT - ©Questel

Title

(US4014449)

Safety cap

Images**Publication numbers with kind code & date**[US4014449](#)

A

1977-03-29

US4014449

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US4014449)

A safety closure for a container comprising an inner cap with a top and cylindrical collar having threads mating with threads on the container and a central longitudinal extending recess; an outer cap having a top and a cylindrical collar fitting

between upper and lower lines of weakness 50 and 52. After the tear strip is removed an annular portion of the hood remains in place as a tamper evident device, due to a flange 36 permanently engaging under a shoulder 38 on the skirt member. The flange is initially downwardly projecting on release of the hood from its mould (figure 7), the flange being caused to inturn on application of the hood onto the closure cap and skirt member. The inturning action is assisted by discontinuities 56 on its free lower edge or by moulding the flange in separate arcuate portions.

Inventors

BLAIR ANDREW ROBERT

CHRISTMAS PAUL MICHAEL

Latest standardized assignees - inventors removed

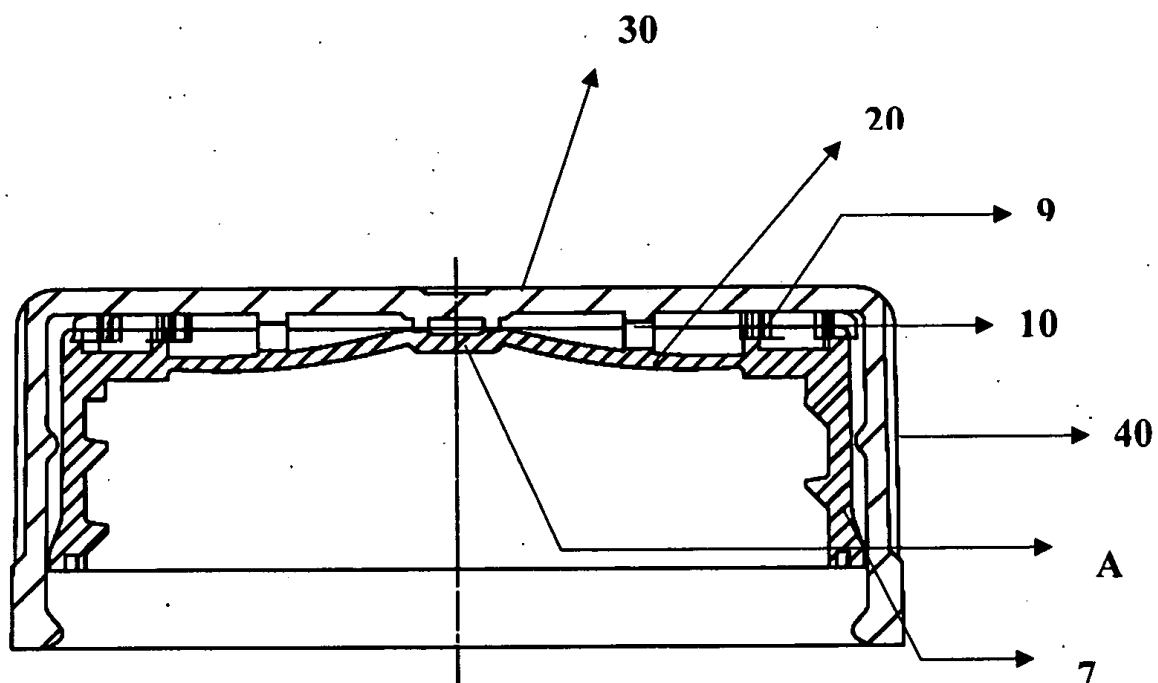
DANIEL MONTGOMERY & SON

Family 44/100 - FAMPAT - ©Questel

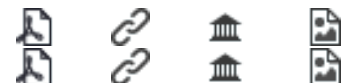
Title

(US20110147334)

Child resistant closure with improved assembly

Images**CLOSURE OPENING****Publication numbers with kind code & date**

US20110147334	A1	2011-06-23	US20110147334
IN0331/CHE/2009	A	2010-08-27	IN2009CH00331

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US20110147334)

The present invention relates to child-resistant closures, and more particularly to child-resistant closures with multiple caps, engaged by two oppositely acting locking system, which offer advantages over the prior art by enabling easier opening, yet remains child-resistant.

Inventors

METTU SUMANTH KUMAR REDDY

DAS SANTOSH KURAR

KAUL SUNIL KUMAR

Latest standardized assignees - inventors removed

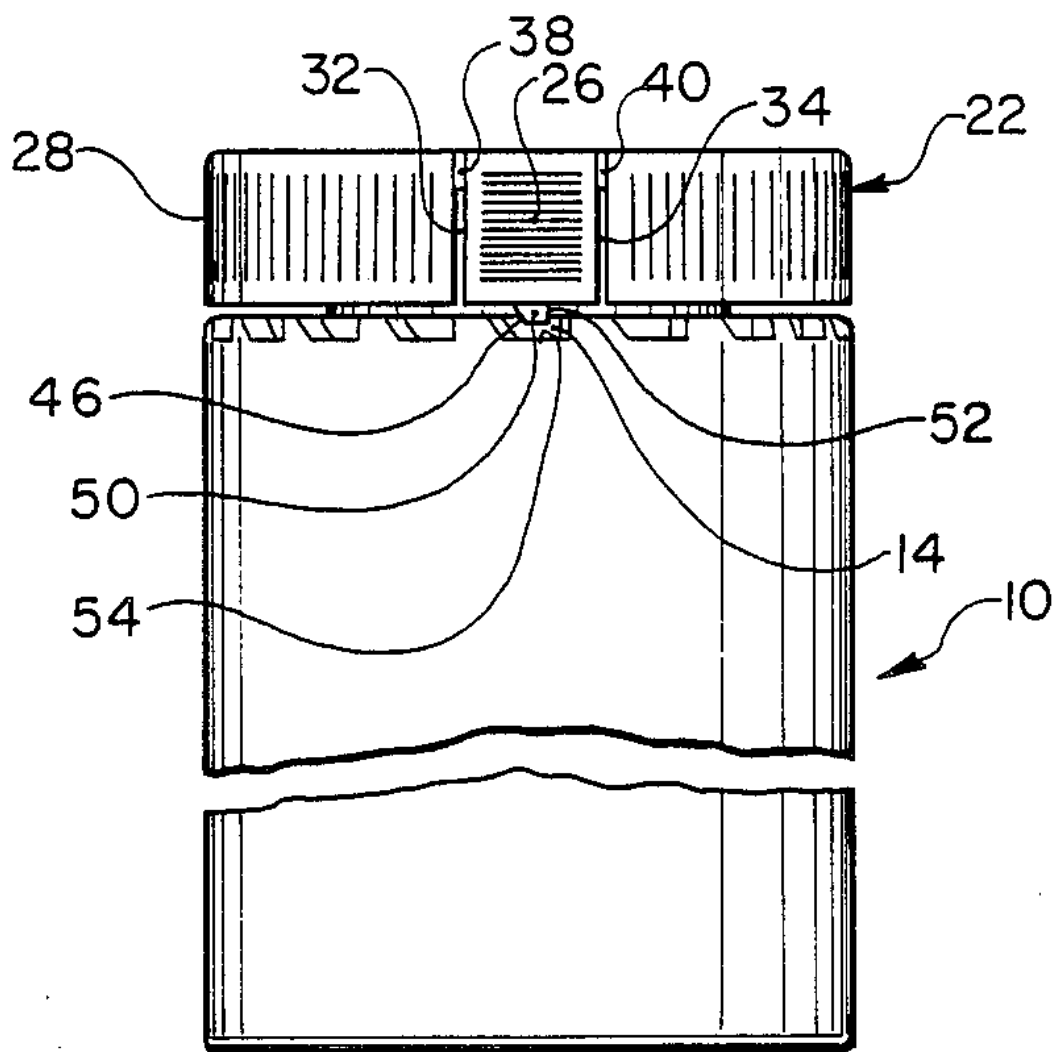
PRASSMAK INDUSTRIES

Family 45/100 - FAMPAT - ©Questel

Title

(US4752014)

Tamper-evident child-resistant closure and container with same

Images**Publication numbers with kind code & date**[US4752014](#)

A

1988-06-21

US4752014

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US4752014)

A container and safety closure therefor includes a hollow container having an externally threaded tubular neck defining a tubular opening into the container. An outer surface area of the container extending outwardly from and adjacent to the neck or portion of the neck or stepped portion thereof or an attached ring has a plurality of recesses extending inwardly. An internal threaded closure adapted to screw on to and off the threaded neck is provided with a web formed integral with a lower edge of the closure and extends outwardly from one side thereof adjacent to the neck. A tab extends upwardly from

the web. A pawl formed integrally with either an under surface of the web or in an inwardly facing vertical surface on the web or an outwardly facing surface of the tab is provided to engage the recesses in the container or neck thereof or in the ring when the closure is threadably moved downwardly on the neck. The upstanding tab extends upwardly from distal end of the web. At least one tamper-evident indicating, frangible web connects the upstanding tab to the closure, this web or webs being fracturable by application of a radially, inwardly directed force to the tab which breaks the frangible web or webs and allows disengagement of the pawl from the recesses so that the closure may be removed from the container.

Inventors

HOUSE RANDALL F

JUK STEVEN B

Latest standardized assignees - inventors removed

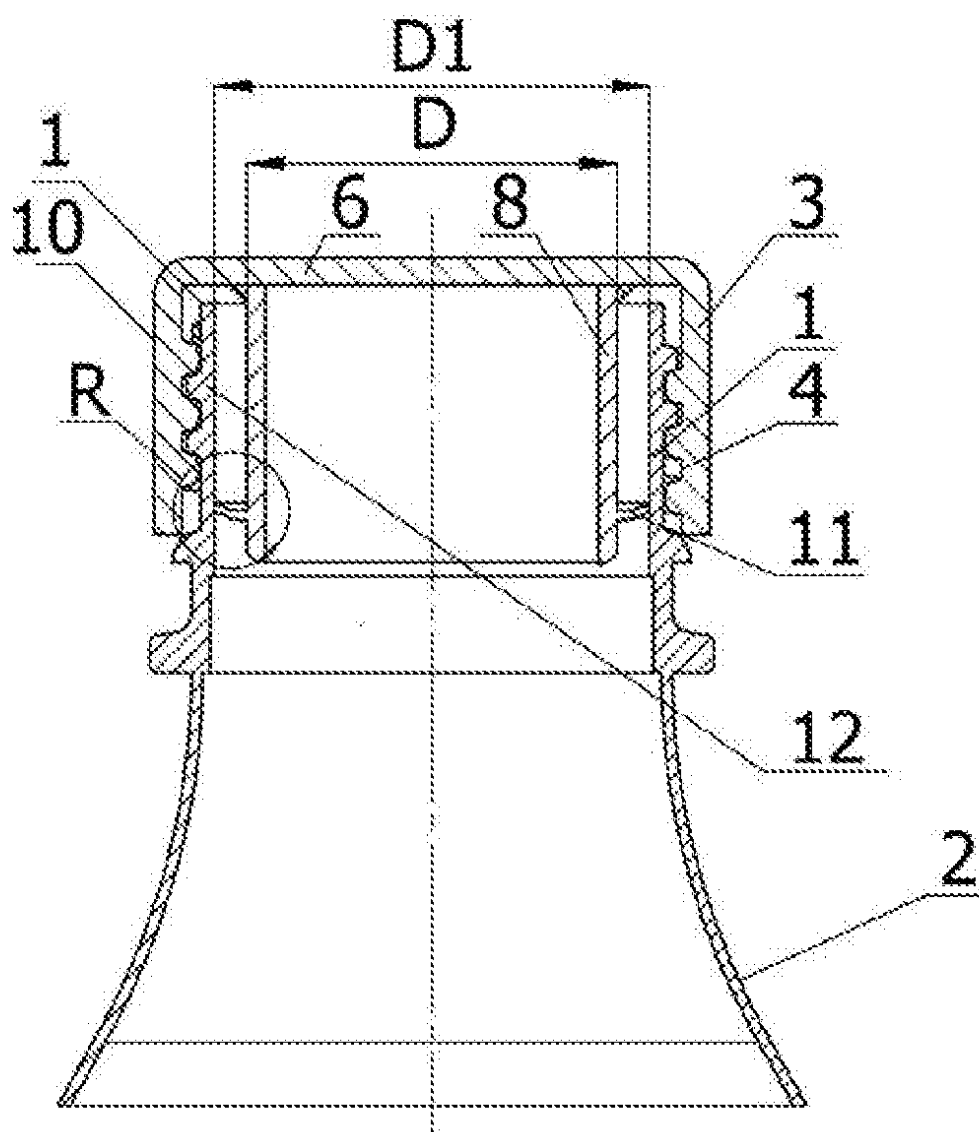
POLY SEAL

Family 46/100 - FAMPAT - ©Questel

Title

(US20190127120)

Structural node of tight separable joint of bottle neck with its threaded screwed cap

Images

Publication numbers with kind code & date

US20190127120	A1	2019-05-02	US20190127120
PL422964	A1	2019-04-08	PL2017422964
DE102018123514	A1	2019-03-28	DE102018123514

**IPC - International classification**

B65D-041/04; B65D-041/04; B65D-041/08; B65D-041/28; B65D-053/02; B65D-055/08

Abstract

(US20190127120)

The structural node of tight separable joint of bottle neck with its threaded screwed cap made of plastic includes a cylindrical neck (1) of bottle (2) and a screw cap (3) screwed onto outer thread (4) of the neck, the cap being provided with an inner thread (5) and an inner sleeve (8) joined inseparably with bottom (6) of the cap, whereas outer surface of the sleeve has at least one annular sealing tongue (11 or 13) end of which fits tight to cylindrical surface (12) of the neck (1) or end of the at least one annular tongue (11 or 13) is set tightly in eat least one circumferential groove (14 or 15) provided on inner cylindrical surface (12) of the neck (1). Moreover the cap (3), on inner surface of its sleeve portion (10), has annular offsets (17) situated above its thread (5) ends of which are tightly set in circumferential grooves (18) provided on outer surface of the neck (1) above its outer thread (4) and opposite said offset ends.

Inventors

CHUPTYS PIOTR

Latest standardized assignees - inventors removed

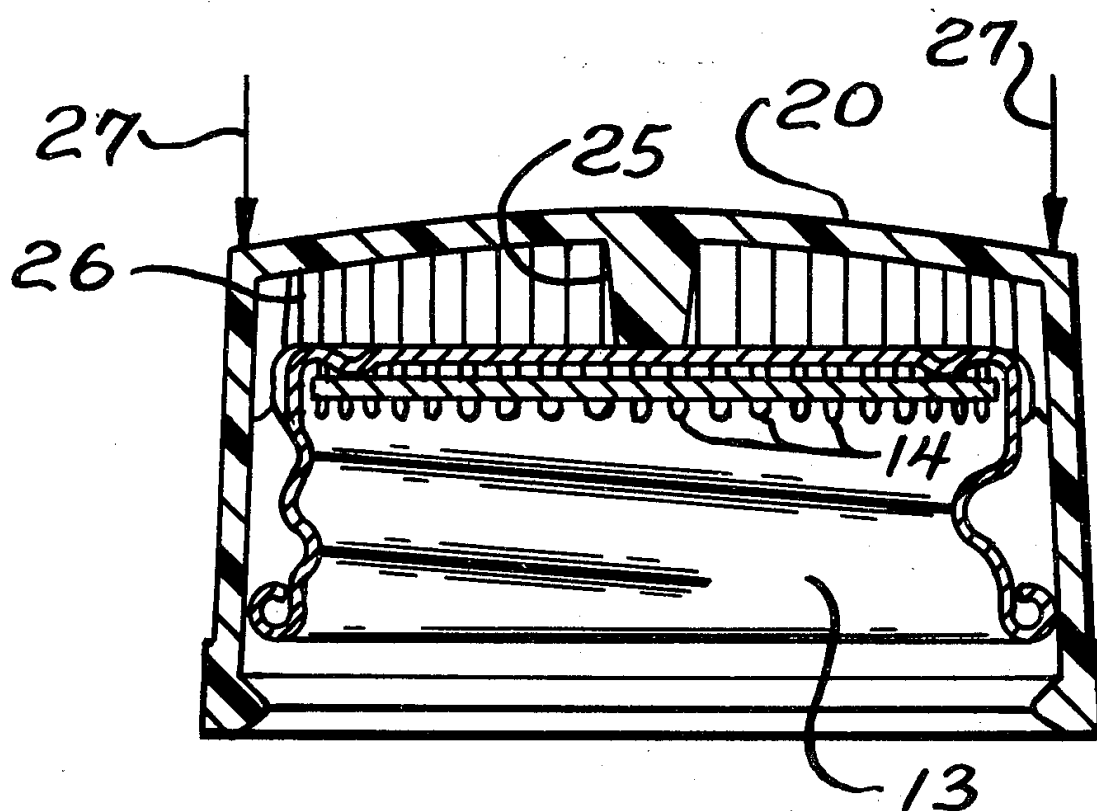
CONTISSI JANUSZ CHUPTYS

Family 47/100 - FAMPAT - ©Questel

Title

(US4095717)

Safety overcap for standard metal screwcaps

Images**Publication numbers with kind code & date**

GB1567590	A	1980-05-21	GB1567590
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US4095717

A

1978-06-20

US4095717

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US4095717)

A safety closure is disclosed which is a one piece plastic molded overcap intended for use with a standard metal screwcap extensively used to close containers of dangerous and toxic materials. The overcap is intended to readily useable manipulation by adults to apply the standard screwcap to a container and to remove the standard cap from a container, but is intended to prevent unauthorized opening by young persons, such as small children.

Inventors

MICHAELSEN ROY A

Latest standardized assignees - inventors removed

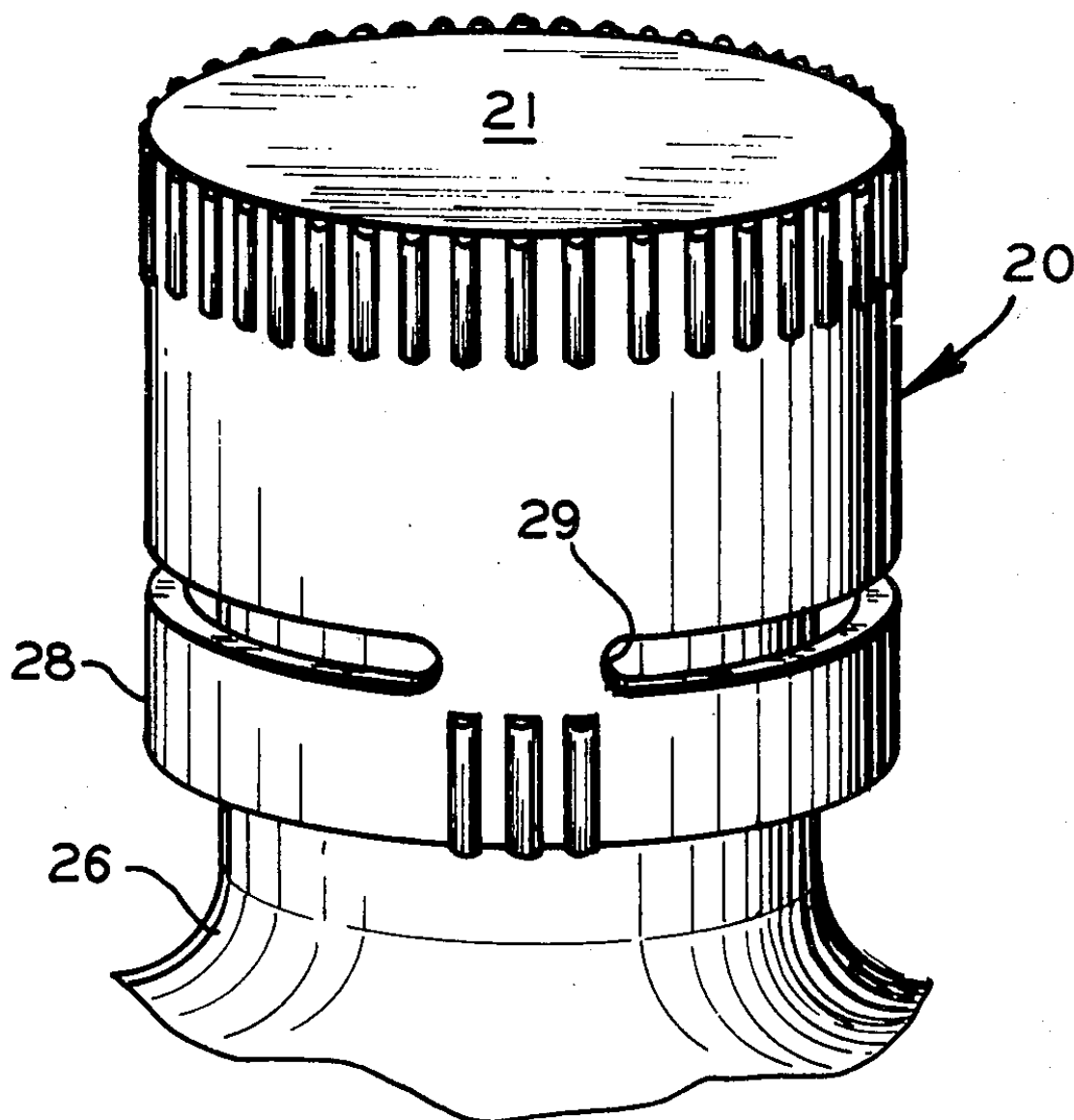
ALMAR ENTERPRISES

Family 48/100 - FAMPAT - ©Questel

Title

(US3993209)

Child-resistant cap

Images

Publication numbers with kind code & date

US3993209 A 1976-11-23 US3993209

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US3993209)

A child-resistant cap and neck finish for a container. The cap has a disc-like top and a depending skirt. The cap skirt and container neck have mating threads, which may be single or multi-start. The cap skirt has a lower, generally annular, or slightly oval locking collar that is connected to the threaded skirt only by flexible webs. The cap skirt and collar are unitary. The collar and the container neck have cooperating child-resistant means which are disengaged by squeezing the collar radially inwardly from opposite sides to bulge it outwardly in the direction normal to the direction of squeezing. The child-resistant elements on the collar are thereby moved out of engagement with those on the container neck and the cap may be turned in a retrograde direction.

Inventors

JULIAN RANDALL K

Latest standardized assignees - inventors removed

SUNBEAM PLASTICS

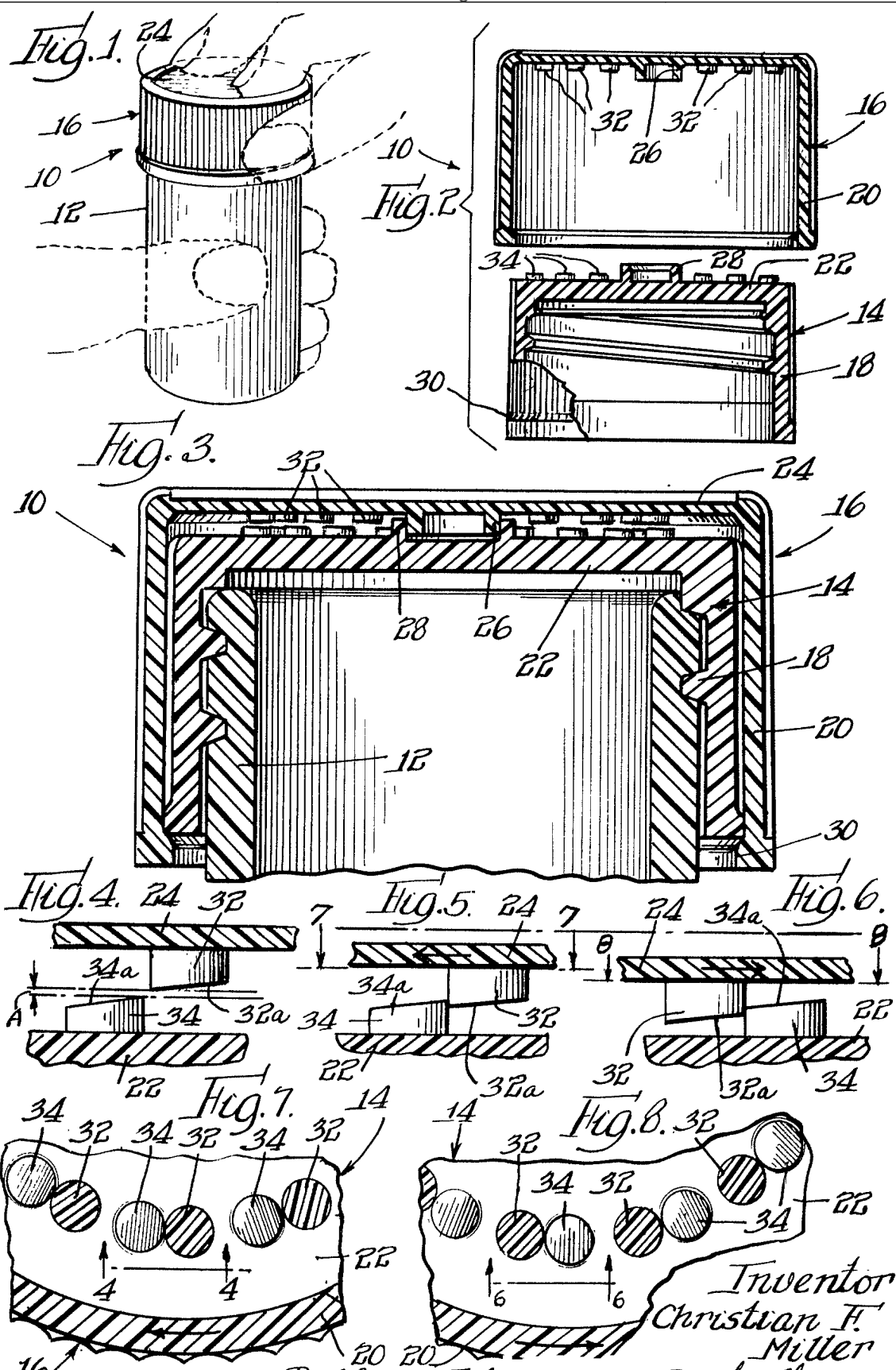
Family 49/100 - FAMPAT - ©Questel

Title

(US3650426)

Safety cap

Images



Publication numbers with kind code & date

CA964228	A	1975-03-11	CA-964228
US3650426	A	1972-03-21	US3650426

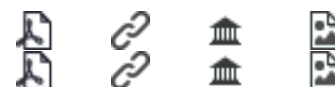
IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US3650426)

The present invention relates generally to closure members or caps for containers and more particularly to closure



members embodying a safety feature to prevent unauthorized removal thereof from containers such as medicine receptacles and the like. The embodiment of the invention disclosed herein includes an inner inverted cup-shaped internally threaded closure member and an outer inverted cup-shaped member adjacently superimposing the inner member. These parts are secured against unintentional axial separation and the outer member is normally freely rotatably with respect to the inner member. The top of the outer member is axially deflectable and protuberance means is arranged to releasably couple the inner and outer members upon deflection of the outer member.

Inventors

MILLER CHRISTIAN F

Latest standardized assignees - inventors removed

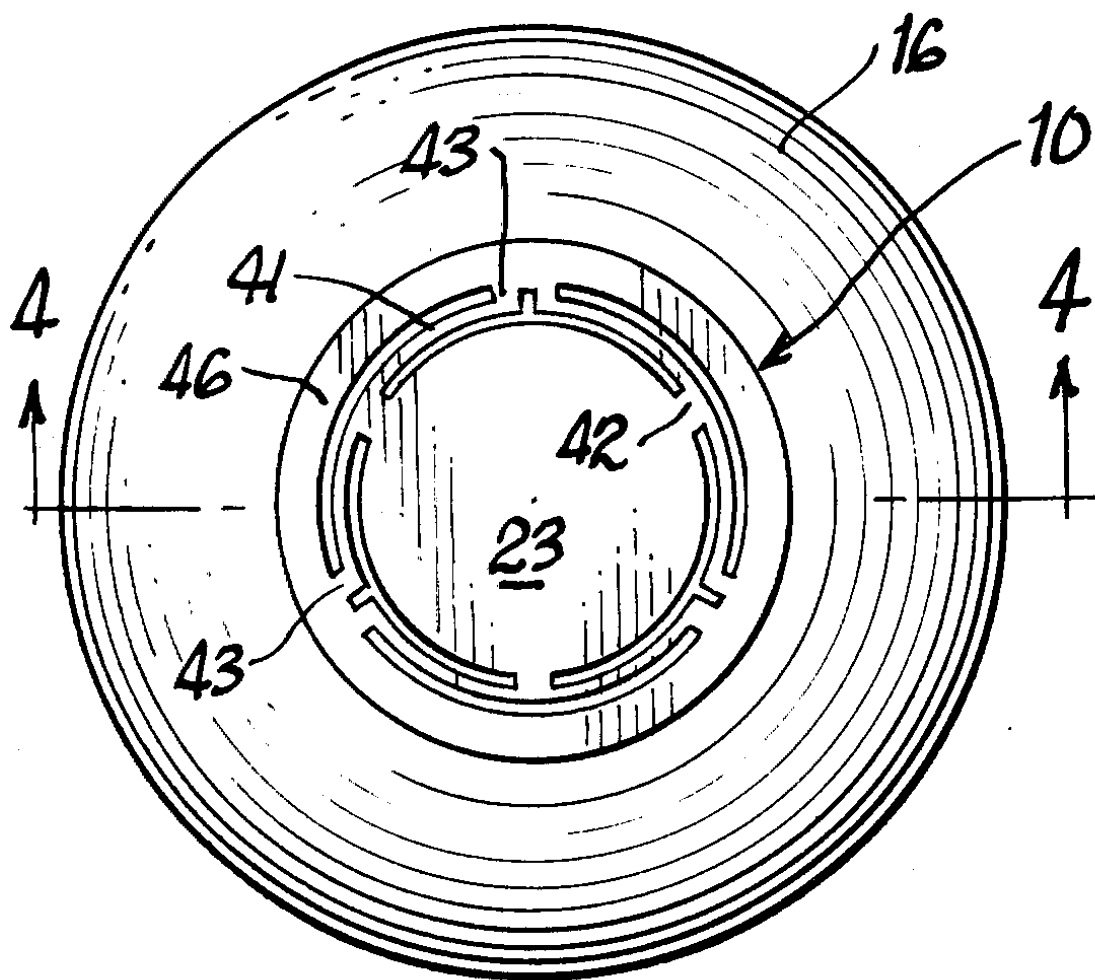
ETHYL MOLDED PRODUCTS

Family 50/100 - FAMPAT - ©Questel

Title

(US3848761)

Child-proof closures

Images**Publication numbers with kind code & date**[US3848761](#)

A

1974-11-19

US3848761

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US3848761)

Closures of the so-called "tug-and-turn" type characterized as child-proof. These closures have two principal parts; an inner sleeve for engagement with the neck of the container, e.g., screw threads and an outer sleeve concentric with,

longitudinally superimposed outside of, and releasably engaged with the container, by means of ratchet teeth or other forms of interfering projections on the outer sleeve and container respectively. Usually ratchet teeth are employed to permit the closure to be re-attached to the container without hindrance. The two sleeves are resiliently joined at some point along their common extent for joint rotating movement. Force applied axially to the outer sleeve will release the same from locked engagement with the container and the closure is then free for unscrewing. The present specification discloses improved means for resiliently joining the two sleeves to permit relative axial movement there between while providing for joint rotation of the sleeves as a unit.

Inventors

LIBIT S

Latest standardized assignees - inventors removed

NEWBY A WESLEY

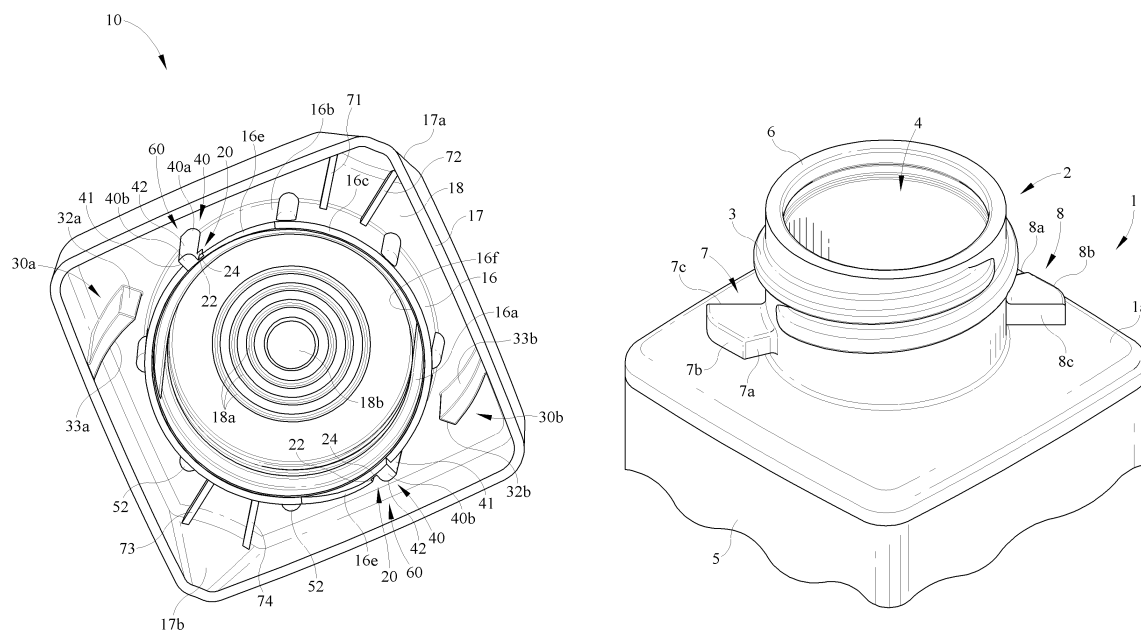
Family 51/100 - FAMPAT - ©Questel

Title

(EP2331422)

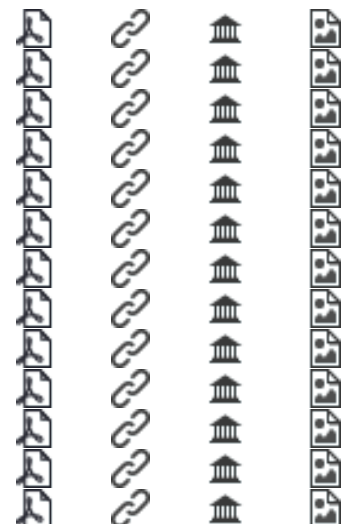
Closure with stopping mechanism

Images



Publication numbers with kind code & date

IN293681	B	2018-03-01	IN-293681
BRPI0913515	A2	2015-12-15	BR200913515
CN102196969	B	2014-12-10	CN102196969B
JP5368568	B2	2013-09-20	JP5368568
EP2331422	B1	2013-03-27	EP2331422
JP2012501928	A	2012-01-26	JP2012501928
EP2331422	A4	2011-12-28	EP2331422
US8079483	B2	2011-12-20	US8079483
IN1721/CHENP/2011	A	2011-12-02	IN2011CN01721
CN102196969	A	2011-09-21	CN102196969
EP2331422	A1	2011-06-15	EP2331422
WO2010/030881	A1	2010-03-18	WO201030881
US20100059519	A1	2010-03-11	US20100059519



IPC - International classification

B65D-041/04; B65D-041/04; B65D-041/34; B65D-055/02; B65D-055/02

Abstract

(EP2331422)

A closure having a stopping mechanism whereby a stop lug is positionable between a flexed and unflexed position relative to a spring gap. The stop lug may project from a skirt of the closure top wall. The spring gap is positioned adjacent the stop lug to provide an area for the stop lug to travel when outside forces are applied to the stop lug and subsequently return back to the unflexed position. The stop lug may have a substantially vertical support rib in combination with a plurality of annularly spaced ribs.

Inventors

BROZELL BRIAN

D SILVA KIRAN M

LUKER C EDWARD

MARRET J NATHAN

MITCHELL JOHN D

Latest standardized assignees - inventors removed

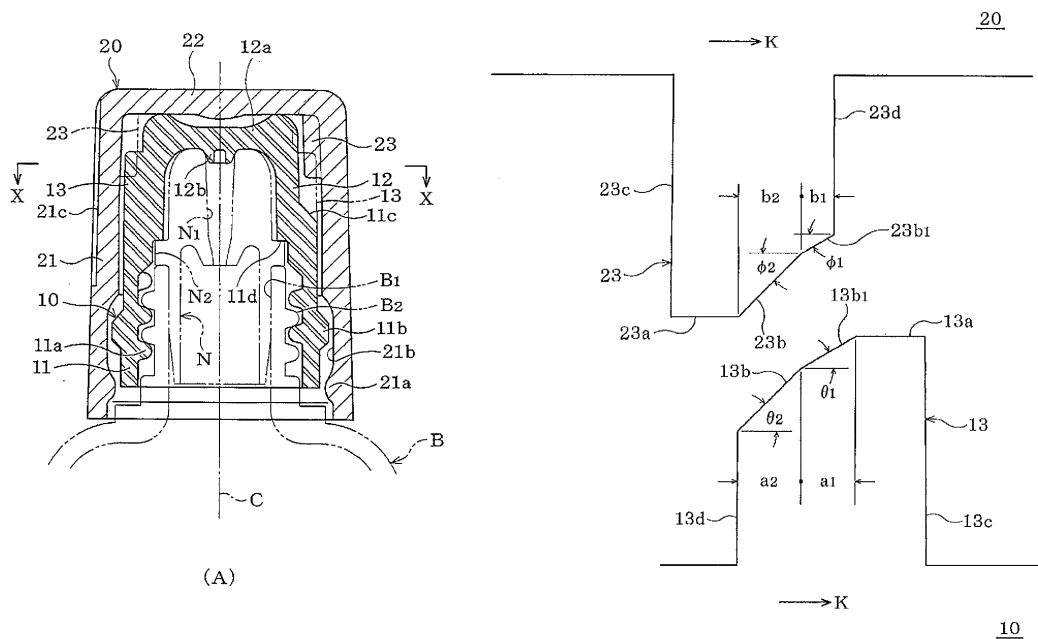
BPRES HEALTHCARE PACKAGING

Family 52/100 - FAMPAT - ©Questel

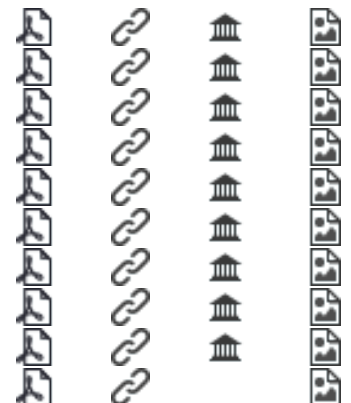
Title

(EP2860129)

Safety cap

Images**Publication numbers with kind code & date**

CA2875602	C	2019-02-26	CA2875602
EP2860129	B1	2017-06-14	EP2860129
AU2012382165	B2	2016-11-17	AU2012382165
JP6034379	B2	2016-11-04	JP6034379
EP2860129	A4	2016-05-04	EP2860129
CN104349988	B	2016-04-20	CN104349988B
US9254947	B2	2016-02-09	US9254947
US20150175324	A1	2015-06-25	US20150175324
EP2860129	A1	2015-04-15	EP2860129
KR20150021020	A	2015-02-27	KR20150021020



CN104349988	A	2015-02-11	CN104349988				
SG11201408091W	A	2015-01-29	SG11201408091W				
AU2012382165	A1	2015-01-22	AU2012382165				
TW201350396	A	2013-12-16	TW201350396				
CA2875602	A1	2013-12-12	CA2875602				
JPWO2013183180	A1	2013-12-12	JP2013183180W				
WO2013/183180	A1	2013-12-12	WO2013183180				

IPC - International classification

B65D-041/04; B65D-041/04; B65D-050/04; B65D-050/04; B65D-055/02; B65D-055/02

Abstract

(EP2860129)

To provide a safety cap whereby a child-resistant function can be improved. A safety cap comprises a screw-type inner cap detachably mounted on a mouth of a container; and an outer cap that is combined with the inner cap so as to be rotatable relative to the inner cap. Each of the inner cap and the outer cap has a plurality of engaging protuberances, the engaging protuberances of the inner cap and the engaging protuberances of the outer cap being engaged with each other and rotating the inner cap when the outer cap is rotated while being pressed toward the inner cap. Each of the engaging protuberances has a vertical part that is engaged when the outer cap is rotated in a closing direction and an inclined part that is engaged when the outer cap is rotated in an opening direction. The inclined part has a steeply inclined part and a gently inclined part that has a gentler inclination than the steeply inclined part, the steeply inclined part and the gently inclined part being continuous with each other.

Inventors

TADA KAORI

TAKAHATA OSAMU

Latest standardized assignees - inventors removed

SHINKO CHEMICAL

Family 53/100 - FAMPAT - ©Questel

Title

(EP1694576)

A tamper-evident closure

Images

EP1694576	A1	2006-08-30	EP1694576
TH70496	A	2005-09-07	TH--70496
TW200519000	A	2005-06-16	TW200519000
WO2005/049443	A1	2005-06-02	WO200549443

**IPC - International classification**

B65D; B65D-039/00; B65D-041/00; B65D-041/04; B65D-041/04; B65D-041/34; B65D-041/34; B65D-041/62; B65D-041/62; B65D-043/00; B65D-043/18; B65D-047/00; B65D-049/02; B65D-049/06; B65D-050/00; B65D-050/04; B65D-051/00; B65D-051/18; B65D-051/20; B65D-055/02; B65D-055/02

Abstract

(EP1694576)

A tamper-evident closure (10) for a container (20) is provided. The closure (10) comprises a first portion (25) including inner (35) and outer (45) parts, and a second portion (30). The outer part (45) is movable relative to the inner part (35) from a first position in which the outer part (45) is immediately adjacent the second portion (30) to a second position in which there is an empty, unobstructed gap (G) therebetween. The inner (35) and outer (45) parts are adapted to become irreversibly locked in the second position so that the outer part (45) cannot be moved back to the first position to close the gap (G). A combination of such a closure (110) with an in-bore filament (100) connectable to a container (120) is also provided.

Inventors

RAMSEY CHRISTOPHER
SKELTON STEVEN ANDREW
MCIVOR CHARLES ANTHONY
MCCLUSKIE STEVEN ALLEN

Latest standardized assignees - inventors removed

OBRIST CLOSURES SWITZERLAND

Family 54/100 - FAMPAT - ©Questel

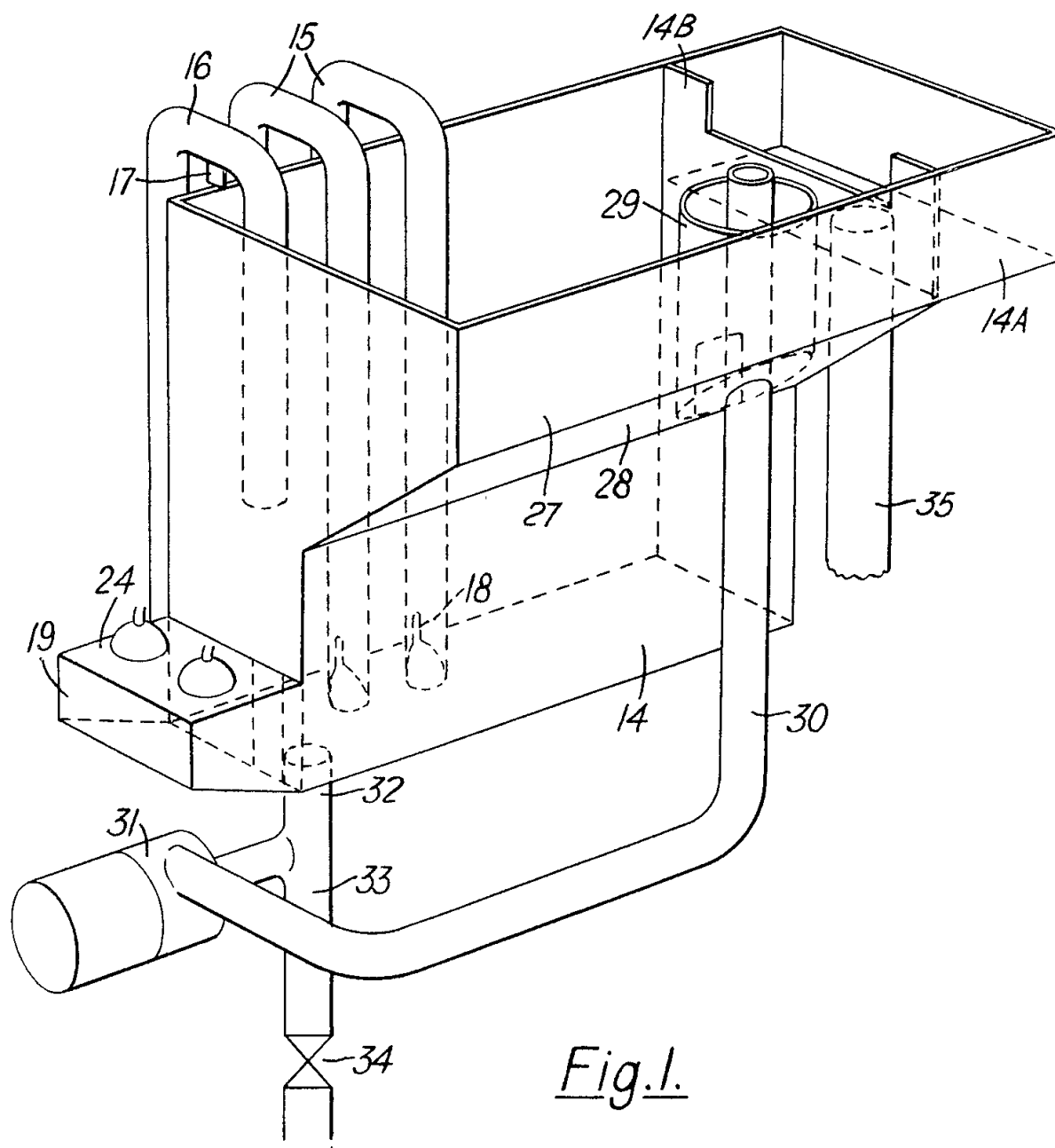
Title

(US3794200)

Safety closure and package

Images

SHEET 1 OF 7



Publication numbers with kind code & date

CA949496	A	1974-06-18	CA-949496
US3794200	A	1974-02-26	US3794200
US3779147	A	1973-12-18	US3779147

IPC - International classification

B65D-041/04; B65D-041/04; B65D-050/06



Abstract

(US3779147)

A safety closure is described for use in sealing glass or similar containers and which may be used as a regular easily removed twist-on twist-off closure or, alternatively, at the option of the user as a locked safety closure for preventing removal of the closure cap by children. The container and the closure cap have cooperating lugs which engage in the usual manner for permitting the closure cap to be used in an unlocked or freely removable manner. A sealing bead is included in the cap for sealing the package in the unlocked use. A pair of cap engaging grooves are provided on the container finish in addition to the cap lugs for engaging the sealing bead and the cap lugs in the locked position and which act to prevent removal of the cap by children.

Inventors

MARKS W

Latest standardized assignees - inventors removed

ANCHOR HOCKING

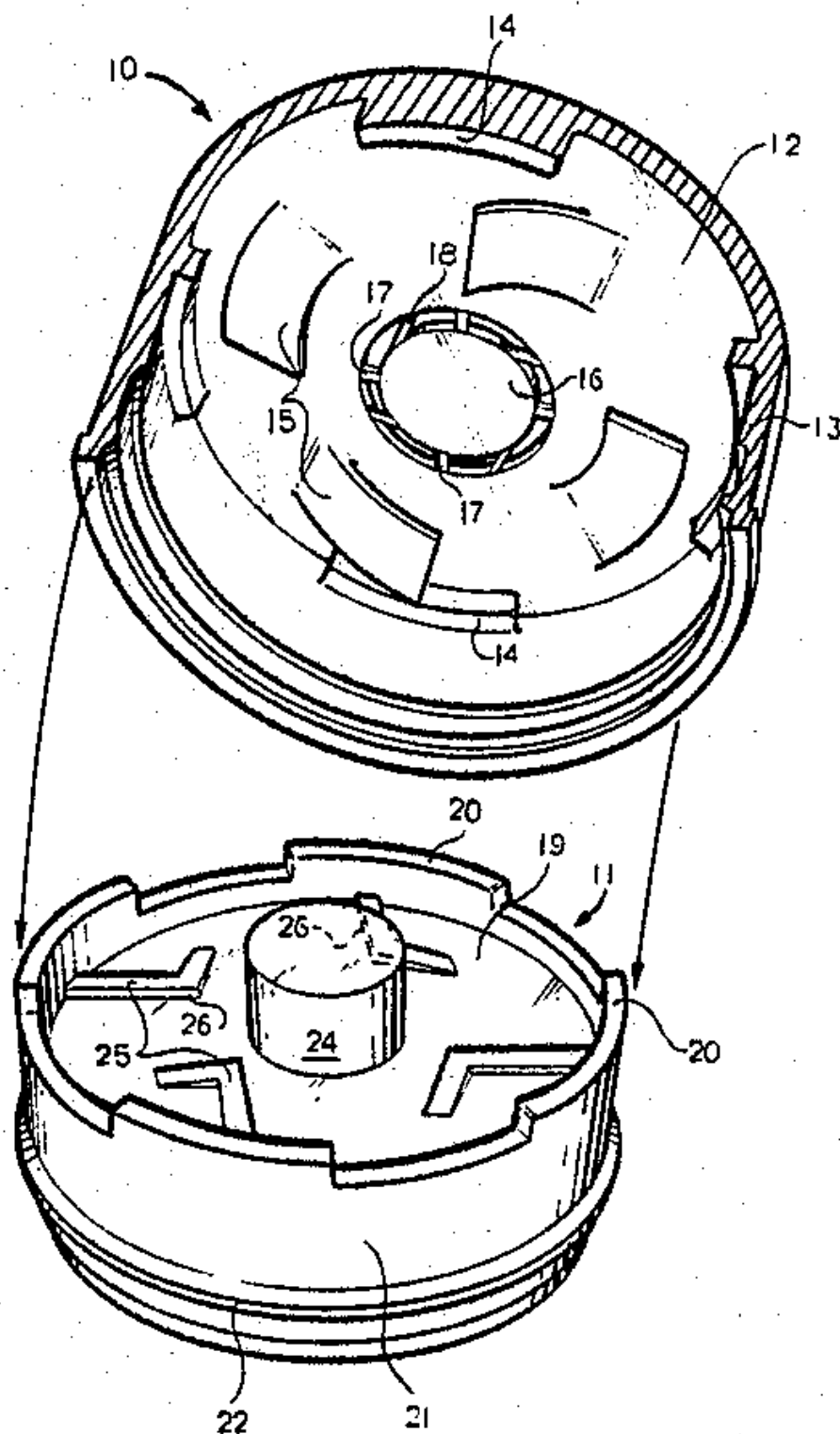
Family 55/100 - FAMPAT - ©Questel

Title

(US4527701)

Tamper indicating child resistant closure

Images



Publication numbers with kind code & date

CA1253117	A	1989-04-25	CA1253117
US4527701	A	1985-07-09	US4527701



IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US4527701)

A two-piece child resistant closure is disclosed in which an outer, molded plastic, closure driving member is formed with an indicator portion that is connected thereto with some webs that are frangible and some non-frangible. The inner plastic member is formed with internal threads that engage the container and it has lugs which engage driving lugs of the outer

member when the outer member is pushed down a predetermined amount. The inner member has an upstanding plunger that serves to engage the indicator and break the frangible connections upon displacement of the members to place them in driving connection for removal of the inner member from the container.

Inventors

SCHAUBECK PAUL E

Latest standardized assignees - inventors removed

OWENS ILLINOIS CLOSURE

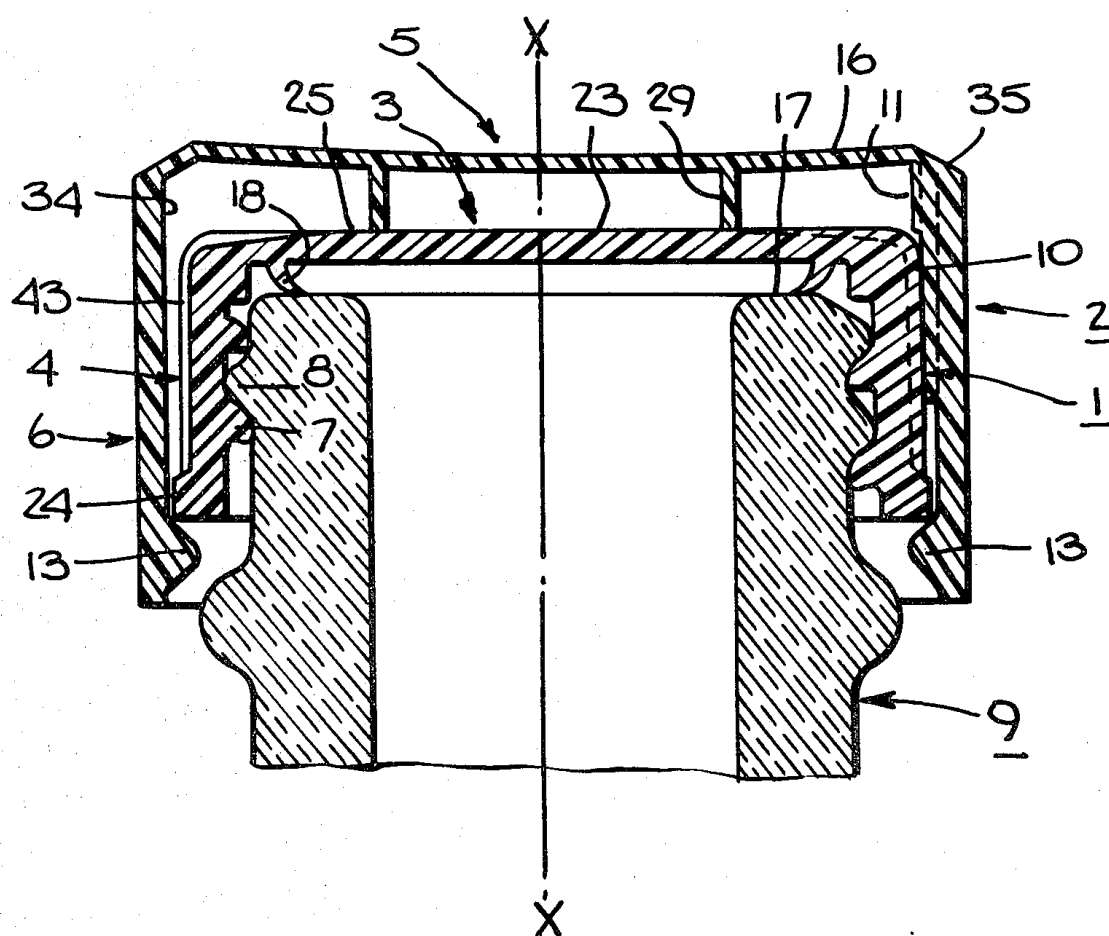
Family 56/100 - FAMPAT - ©Questel

Title

(US3912101)

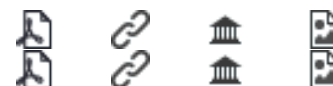
Childproof closure

Images



Publication numbers with kind code & date

AU7937975	A	1976-09-23	AU7579379
US3912101	A	1975-10-14	US3912101



IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US3912101)

The Specification discloses a childproof screw closure for a container, comprising an inner closure member and an outer closure member which shrouds the inner closure member and is held captive on the same. The outer closure member is axially movable on the inner closure member and has projections arranged so that when the outer closure member is axially depressed against a bias, they engage projections on the inner closure member and thereby enable the closure to be unscrewed. To enable the closure to be screwed up irrespective of the relative axial positions of the inner and outer

closure members, the skirt of the outer closure member is formed with ratchets which are biased resiliently against knurls formed on the periphery of the skirt of the inner closure member. Preferably the skirt of the outer closure member is locally reduced in thickness on either side of each ratchet so as to provide the desired characteristics for the ratchets.

Inventors

RAYNER ADRIEN PATRICK

TOD CHRISTOPHER JAMES NIEBUHR

JAMES MICHAEL

Latest standardized assignees - inventors removed

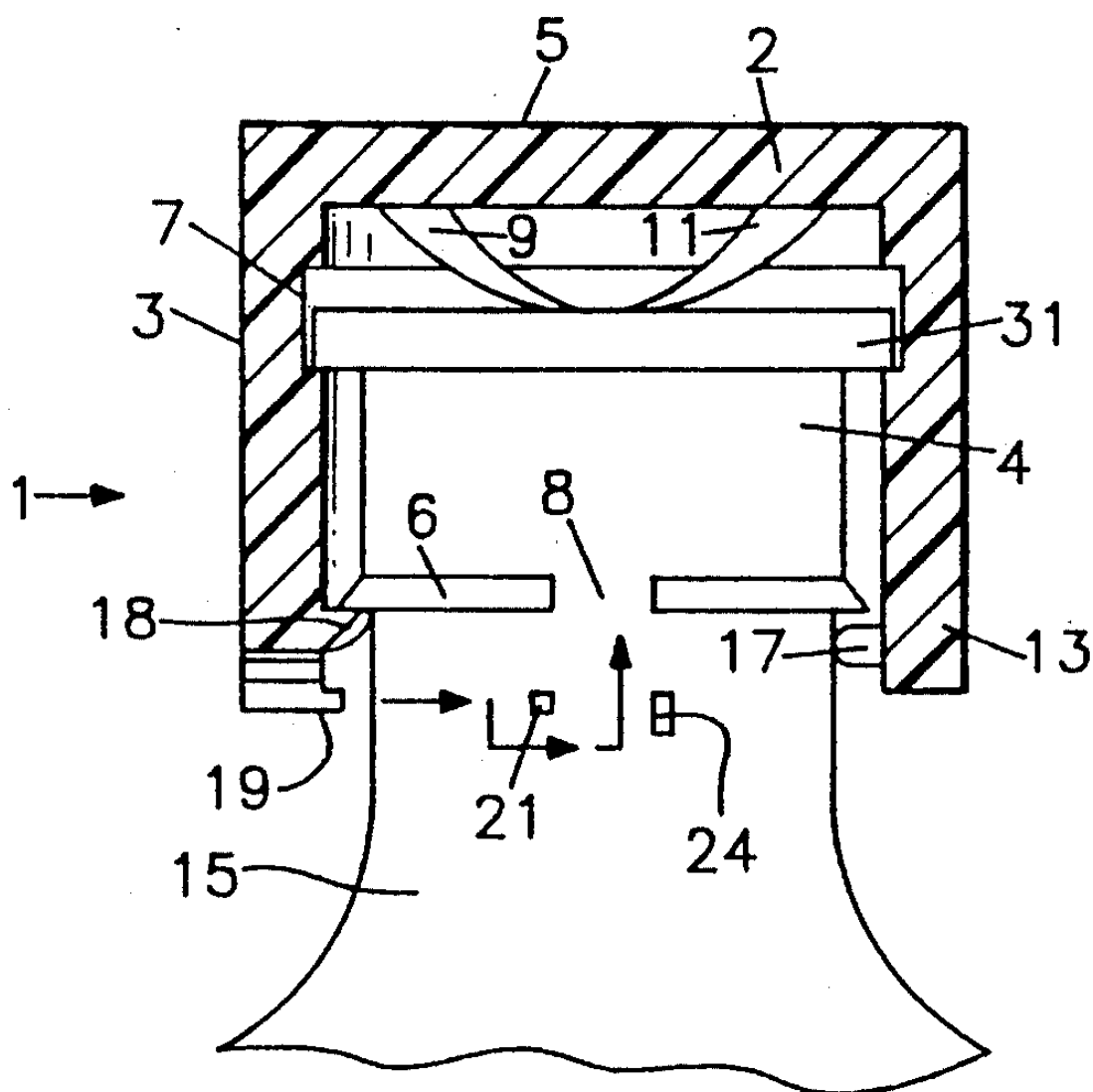
METAL BOX

Family 57/100 - FAMPAT - ©Questel

Title

(US5161706)

Twist and push snap-on child resistant cap

Images**Publication numbers with kind code & date**[US5161706](#)

A 1992-11-10

US5161706

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US5161706)

A twist and push snap-on, child resistant cap and container has an inner cap seal which is easily snapped onto a neck of a container and an outer cap. The outer cap has a top and sidewalls and has a greater cross-sectional area than the inner cap, and receives and physically restrains the inner cap within the outer cap such that the inner cap may be moved upwardly and downwardly within it over specified distance. The outer cap includes a locking lug located on its inside wall adapted to snap over a circumferential bead located on the neck of the container. There is a stop located on the inside wall of the outer cap and is freely rotatable about the neck of the container except when in contact with stop(s) on the neck of the container at its level of rotation when the outer cap is on the container. A spring mechanism located between the inner and outer cap so as to bias downwardly the inner cap. There is a bead located circumferentially about its neck with a break to allow the lug and stop of the outer cap to pass therethrough. A first stop is located on the neck near but not above or below the opening in the bead and a second stop, larger than the first, is capable of preventing movement of the outer cap when rotated with its stop against its second stop.

Inventors

WEINSTEIN JACK

Latest standardized assignees - inventors removed

PRIMARY DELIVERY SYSTEMS

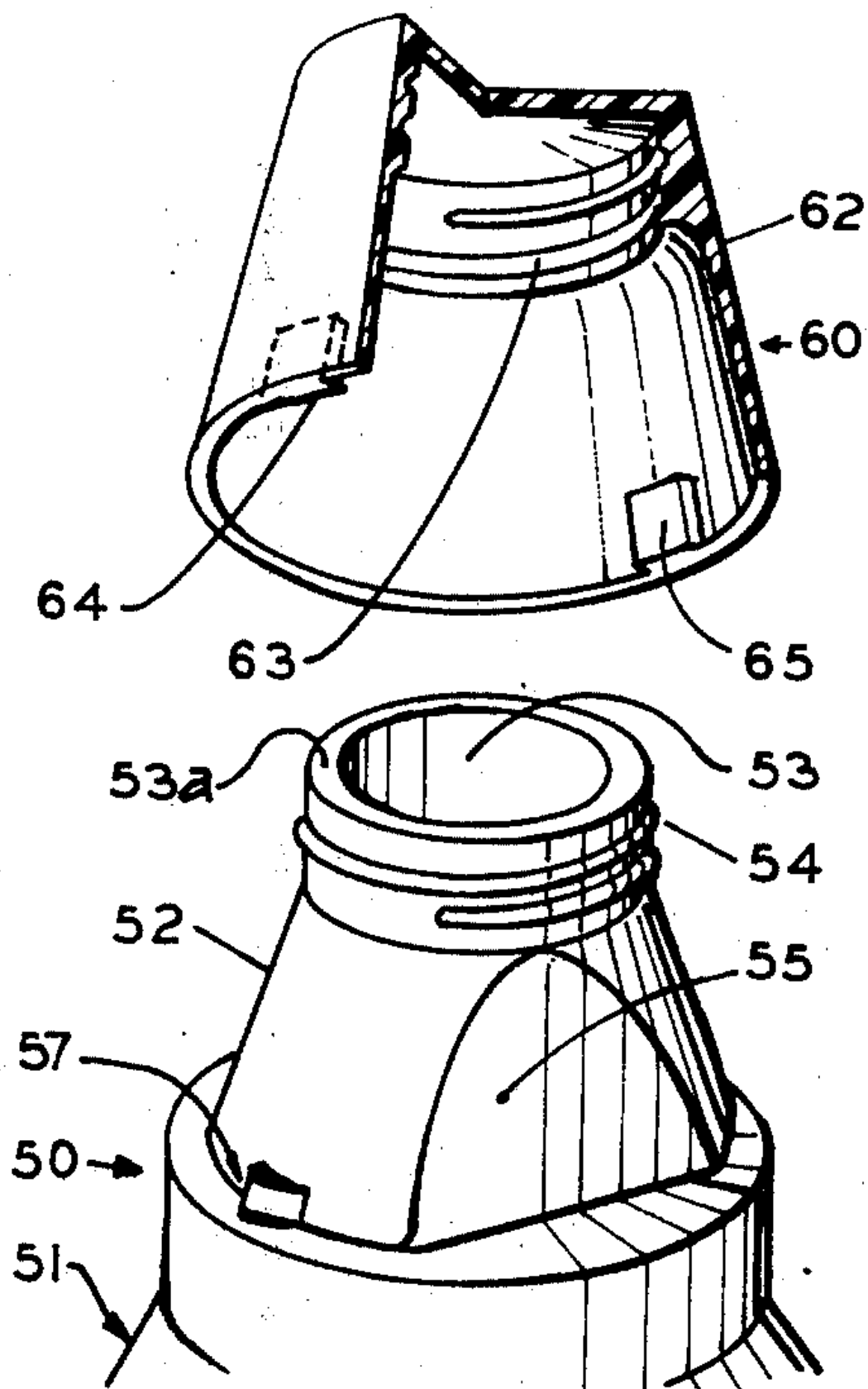
Family 58/100 - FAMPAT - ©Questel

Title

(US3984021)

Safety closure container

Images



Publication numbers with kind code & date

[US3984021](#)

A 1976-10-05

US3984021



IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US3984021)

A container and closure construction featuring locking arrangements in the form of registering dent(s) and projection(s) formed on said container and closure which engage easily and disengage only through purposeful mind-controlled manipulation thereof, coupled with flexing of one of said container or closure to accomplish said disengagement. A screw thread coupling of closure and container represents a preferred embodiment.

Inventors

UHLIG GERHARDT E

Latest standardized assignees - inventors removed

OWENS ILLINOIS CLOSURE

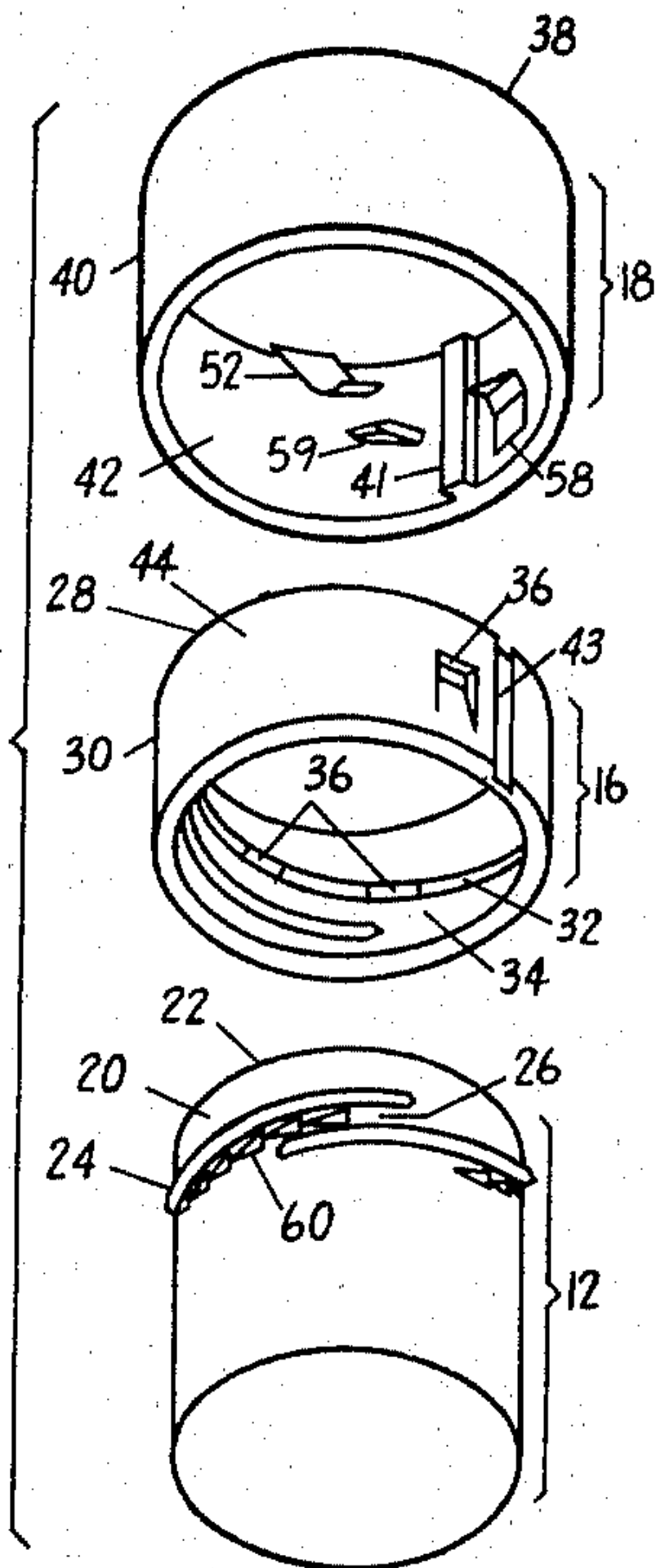
Family 59/100 - FAMPAT - ©Questel

Title

(US3820676)

Safety closure assembly and container

Images



Publication numbers with kind code & date

US3820676 A 1974-06-28 US3820676

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US3820676)

A safety package structure is provided comprising an externally threaded container and closure assembly therefor which includes an internally threaded cap for the container and a cover for the cap. The cover and cap are provided with corresponding and mating guide members to align the assembly, to permit longitudinal movement of the cover with respect to the cap and to impart torque to the cap. Yieldable means are disposed between the cover and the cap to maintain the cover in an axially compressible, predetermined uncompressed position. The cap side wall is provided with transverse apertures positioned on the path of and extending through the internal thread. Longitudinally resilient, ramplike ratchets are laterally disposed on the inner surface of the cover side wall so as to extend through the cap side wall apertures for releasably interlocking with corresponding detents in the thread groove on the neck of the container when the cover is in the uncompressed position. The configuration of the ratchets and detents is such that the ratchets will easily slide into and out of successive detents and, thus, permit conventional closing of the container by ordinary rotation of the closure assembly relative to the container. Reverse rotation of the closure assembly relative to the container is prevented by corresponding locking side walls on the ratchets and detents which are in planes substantially in alignment with radii to the center of the package. The closure assembly is removed from the container by simultaneously rotating the assembly and pressing on the cover top wall to move the cover to a compressed position whereby the ratchets, which follow the movement of the cover side wall, are withdrawn from the detents. Upon release of the pressing force, the yieldable means bias the cover to its original uncompressed position which realigns the ratchets to releasably interlock with the detents when the closure assembly is threadedly secured to the container.

Inventors

MUCSI M

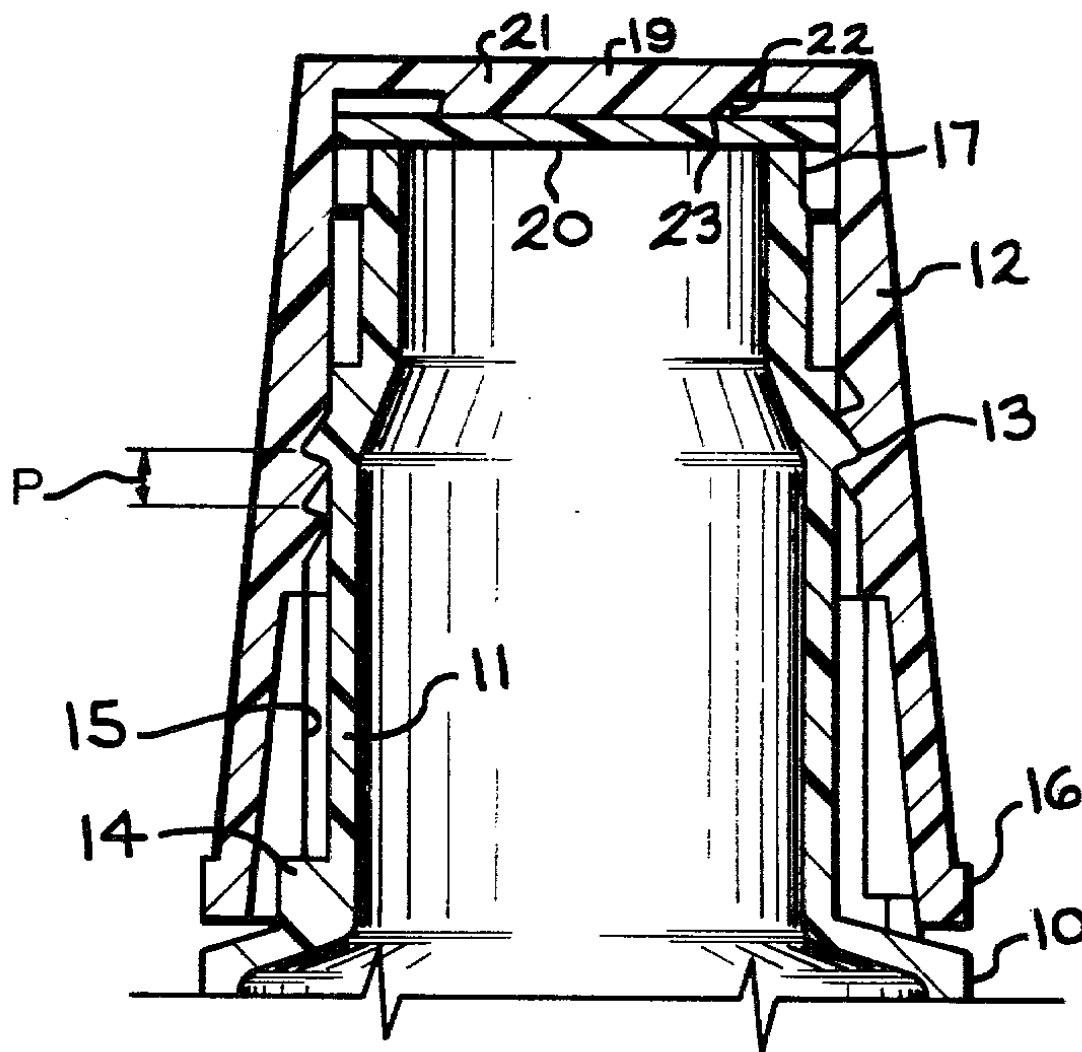
Family 60/100 - FAMPAT - ©Questel

Title

(US4351443)

Dual liquid tight closures

Images

**Publication numbers with kind code & date**[US4351443](#)

A

1982-09-28

US4351443

**IPC - International classification**

B65D-041/04; B65D-041/04; B65D-050/04

Abstract

(US4351443)

A container and closure construction featuring double means of liquid tight-sealing with a threaded closure so arranged as to double seal combined or sequentially against two separate areas of the rim of a container neck to provide sealing properties even when closure is partially unscrewed from the top of the rim of the container. A preferred embodiment has its application of the above arrangement together with child proof safety closures having unique safety locking arrangements in the form of coincidentally registered abutments and projections formed in and/or on said container and closure which do not substantially interfere with applying the closure to the container but which can be disengaged only through purposeful mind-controlled dextrous manipulation.

Inventors

UHLIG GERHARDT E

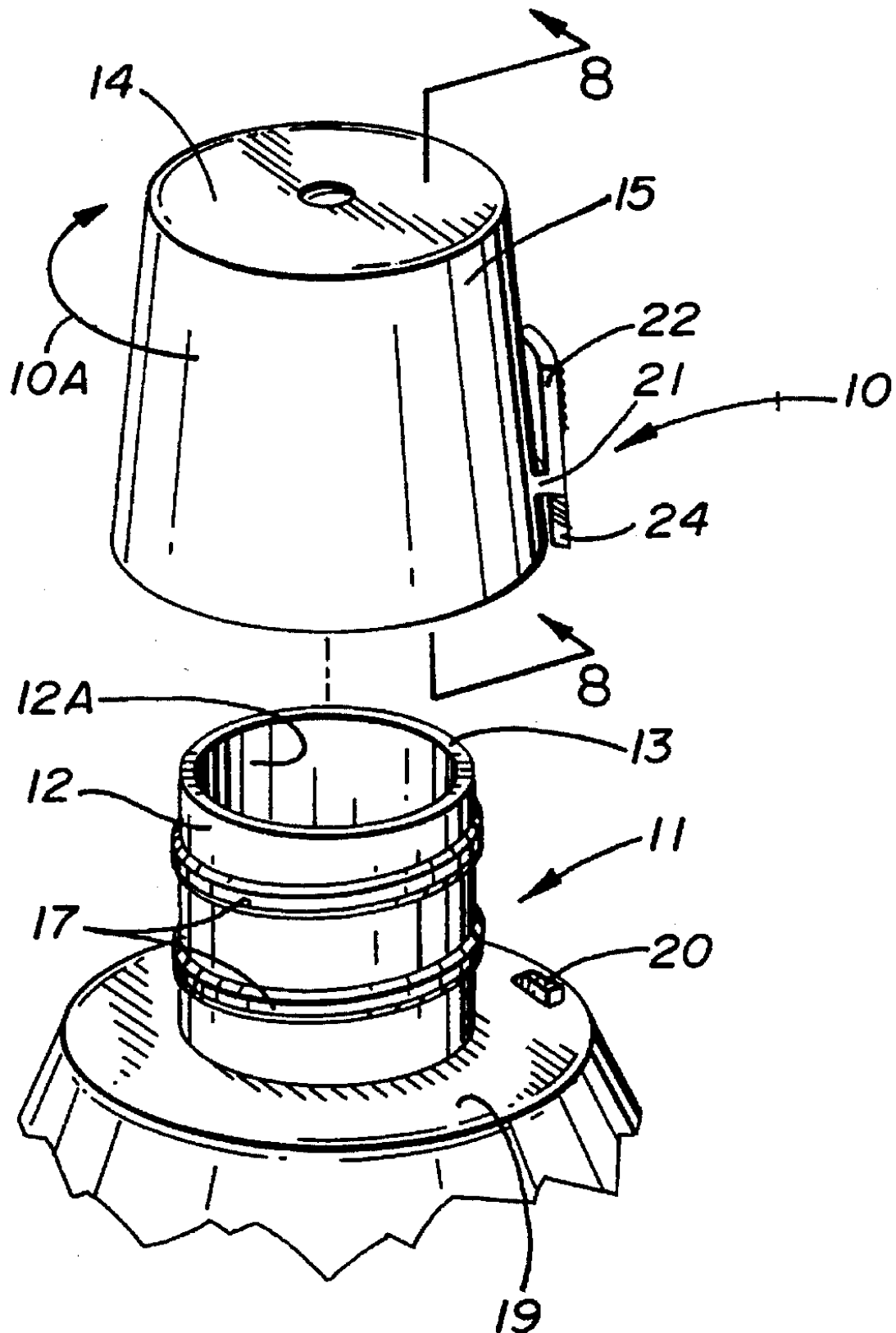
Family 61/100 - FAMPAT - ©Questel

Title

(US5460281)

Safety lock screw cap and container

Images

**Publication numbers with kind code & date**[US5460281](#)

A 1995-10-24

US5460281

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US5460281)

A safety locking screw cap and container having locking projections on the container that are registerable with a flexible flange arm extending from the screw cap to prevent rotation and removal of the cap relative the container. The cap may be

removed from the container by flexing the flanged arm away from the cap by pressing on a portion of the flanged arm thus clearing the locking projection allowing removal rotation of the cap on the threaded neck of the container.

Inventors

RAPCHAK THOMAS P

MARINO MICHAEL

Latest standardized assignees - inventors removed

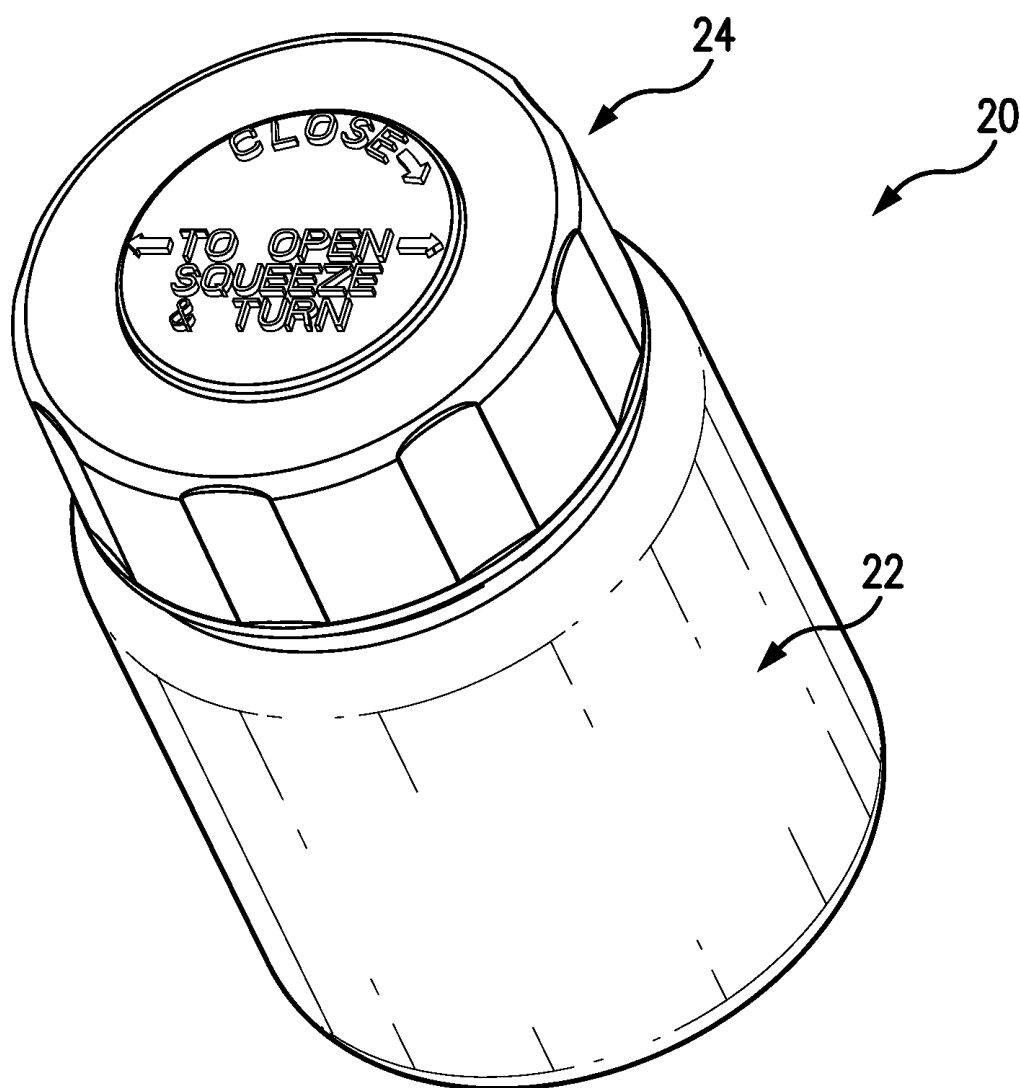
WEST PENN PLASTICS NEW CASTLE

Family 62/100 - FAMPAT - ©Questel

Title

(US20150344193)

Child-Resistant Closure

Images**Publication numbers with kind code & date**[US20150344193](#)

A1 2015-12-03

US20150344193

**IPC - International classification**

B65B-069/00; B65D-041/04; B65D-041/04

Abstract

(US20150344193)

A child-resistant cap for closing an externally threaded neck of a container body, the cap comprising: an inner member having an internal thread for engaging the neck external thread; and an outer member encircling the inner member for gripping by a user, wherein: the outer member comprises a sidewall bearing a first engagement feature; and an upper web having an underside bearing a second engagement feature; and the inner member comprises: an inner sidewall bearing the internal thread; an outer sidewall spaced-apart from the inner sidewall and having an outer surface bearing a third engagement feature, the third engagement feature engagable to the first engagement feature responsive to inward compression of the outer member sidewall so as to allow the outer member to transmit a removal rotation to the inner member; and an upper web joining the inner sidewall and outer sidewall and having an upper surface bearing a fourth engagement feature, the fourth engagement feature engagable to the second engagement feature to transmit an installing rotation to the inner member.

Inventors

PISCOPO PETER A

Latest standardized assignees - inventors removed

PLASTEK INDUSTRIES

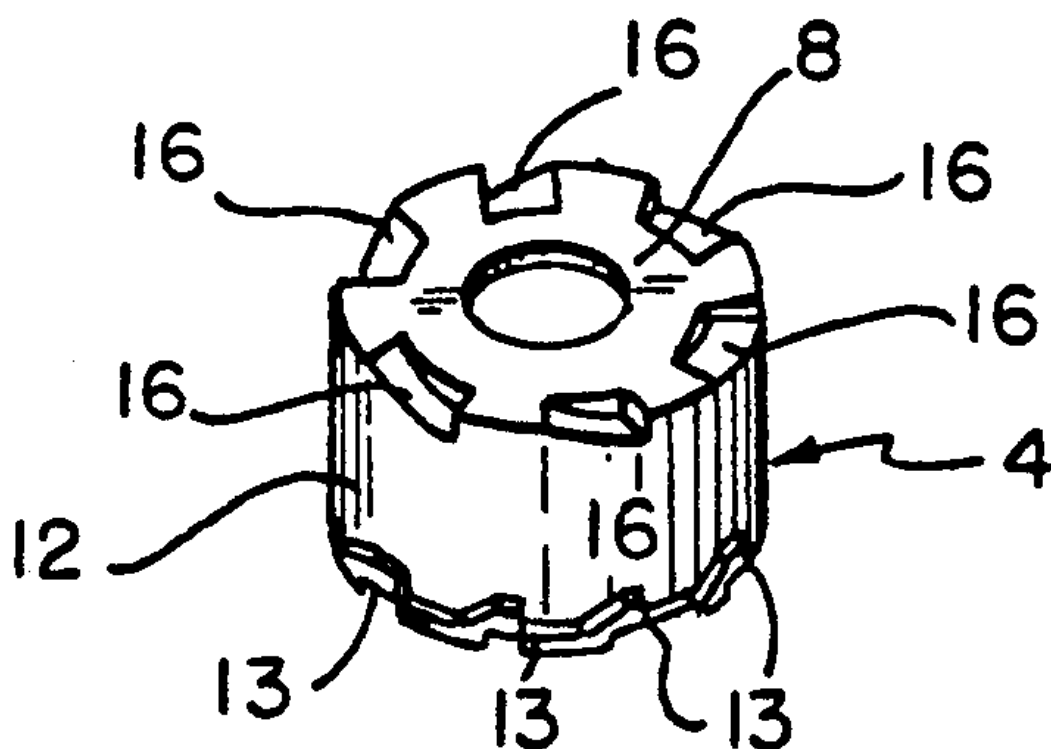
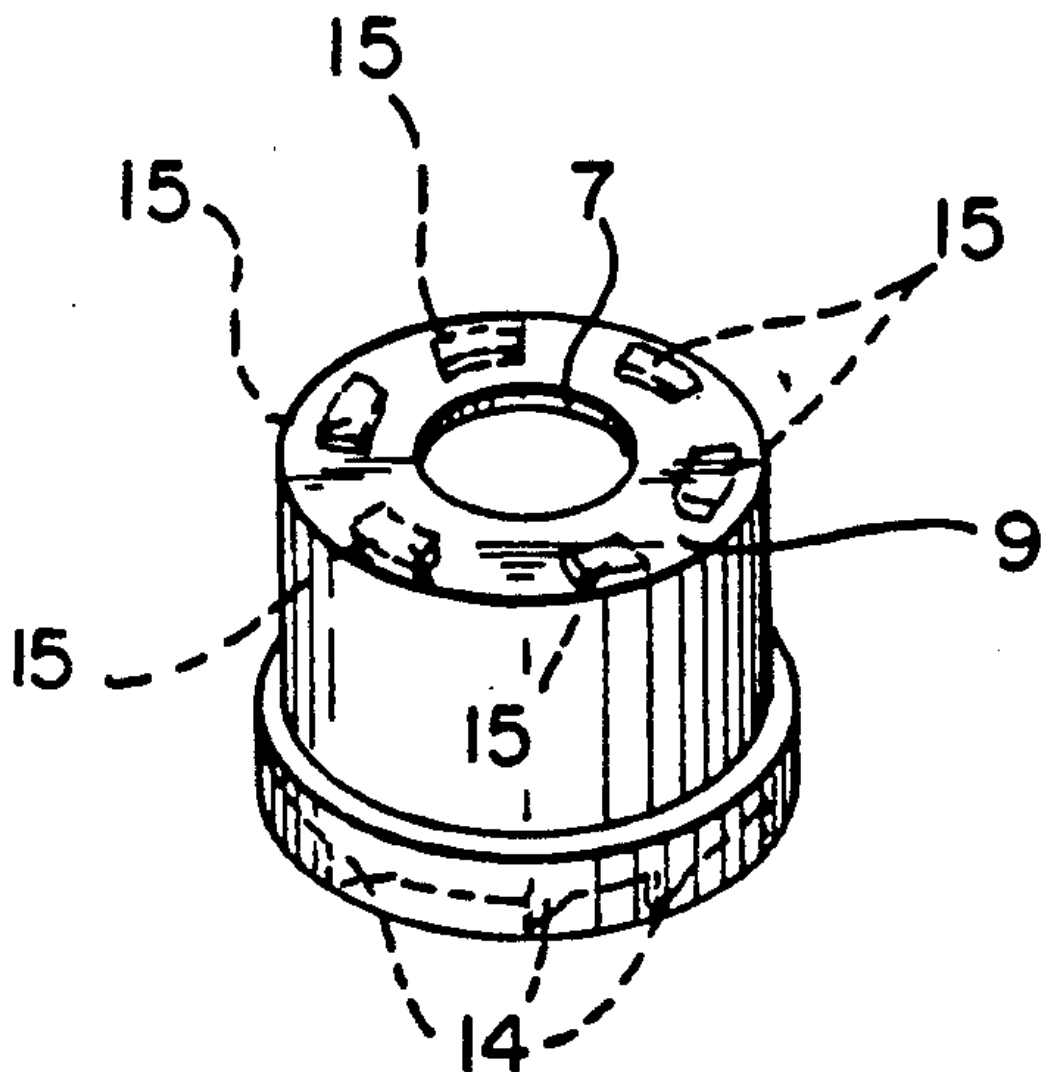
Family 63/100 - FAMPAT - ©Questel

Title

(US5316161)

Child resistant closure

Images



IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US5316161)

A child resistant closure having an inner cap and an outer cap. The inner cap is normally biased into engagement with the outer cap for screwing the closure onto the container but the outer cap and inner cap become disengaged when the outer cap is turned in a direction to remove the closure from the container resulting in the outer cap being freely rotatable on the inner cap. Cooperating rigid fingers and teeth are provided on the inner and outer caps which become engaged when the outer cap is pushed downwardly to interconnect the inner and outer caps so that the closure can be removed from the container.

Inventors

GARGIONE FRANK V

Latest standardized assignees - inventors removed

COMAR

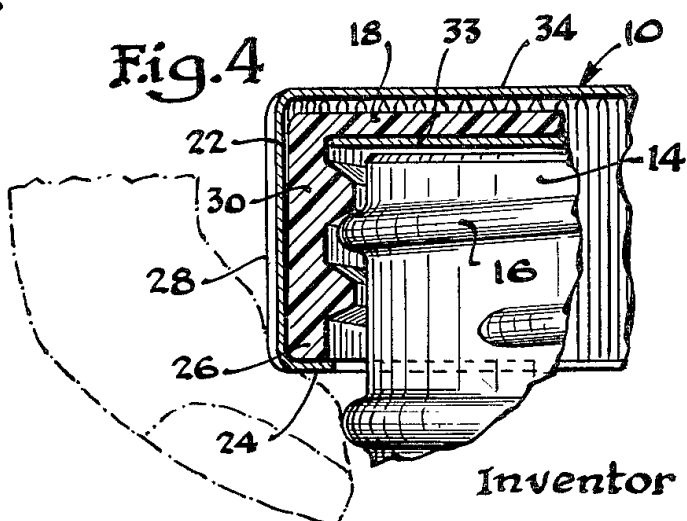
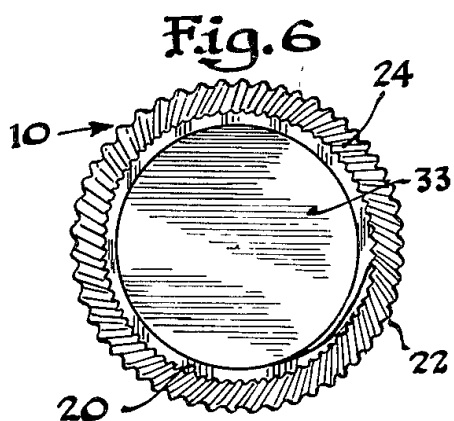
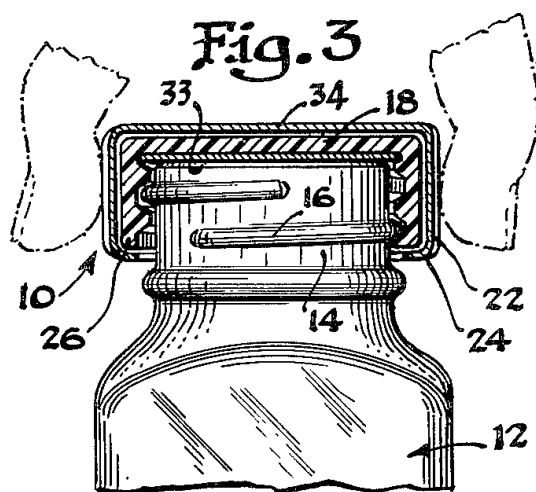
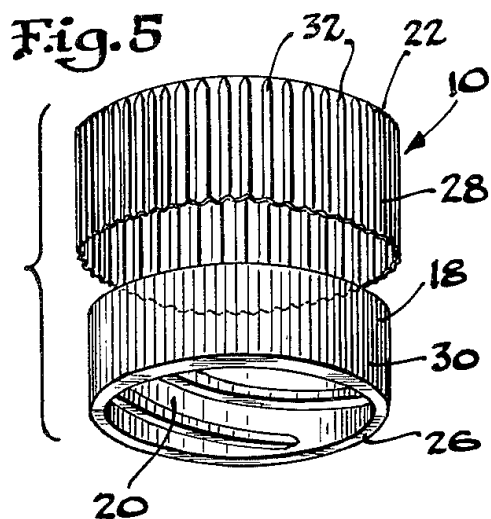
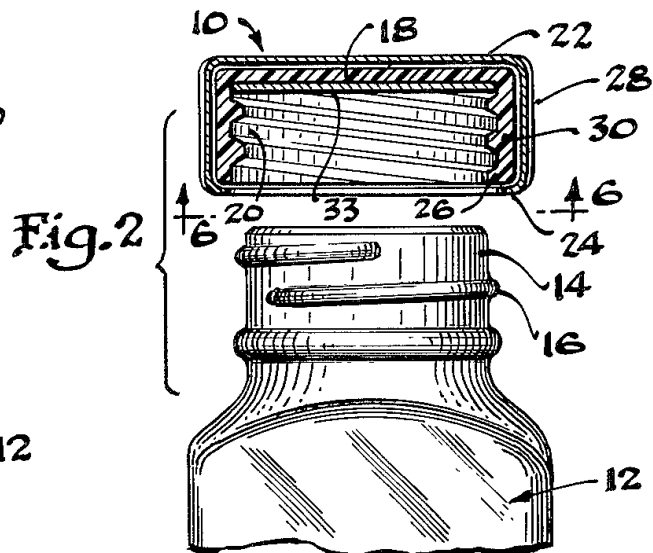
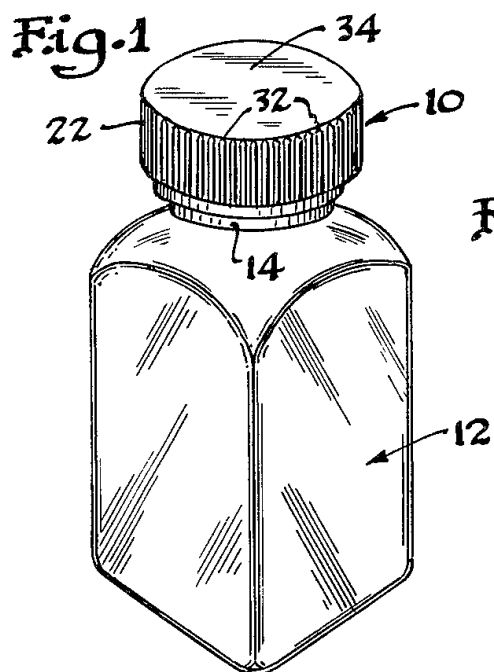
Family 64/100 - FAMPAT - ©Questel

Title

(US3027035)

Safety closure for containers and the like

Images



Inventor
 Jacquelyn L. Farago
 By John H. Schneider
 Attorney

Publication numbers with kind code & date

US3027035

A

1962-03-27

US3027035



IPC - International classification

B65D-050/04; B65D-050/04

Inventors

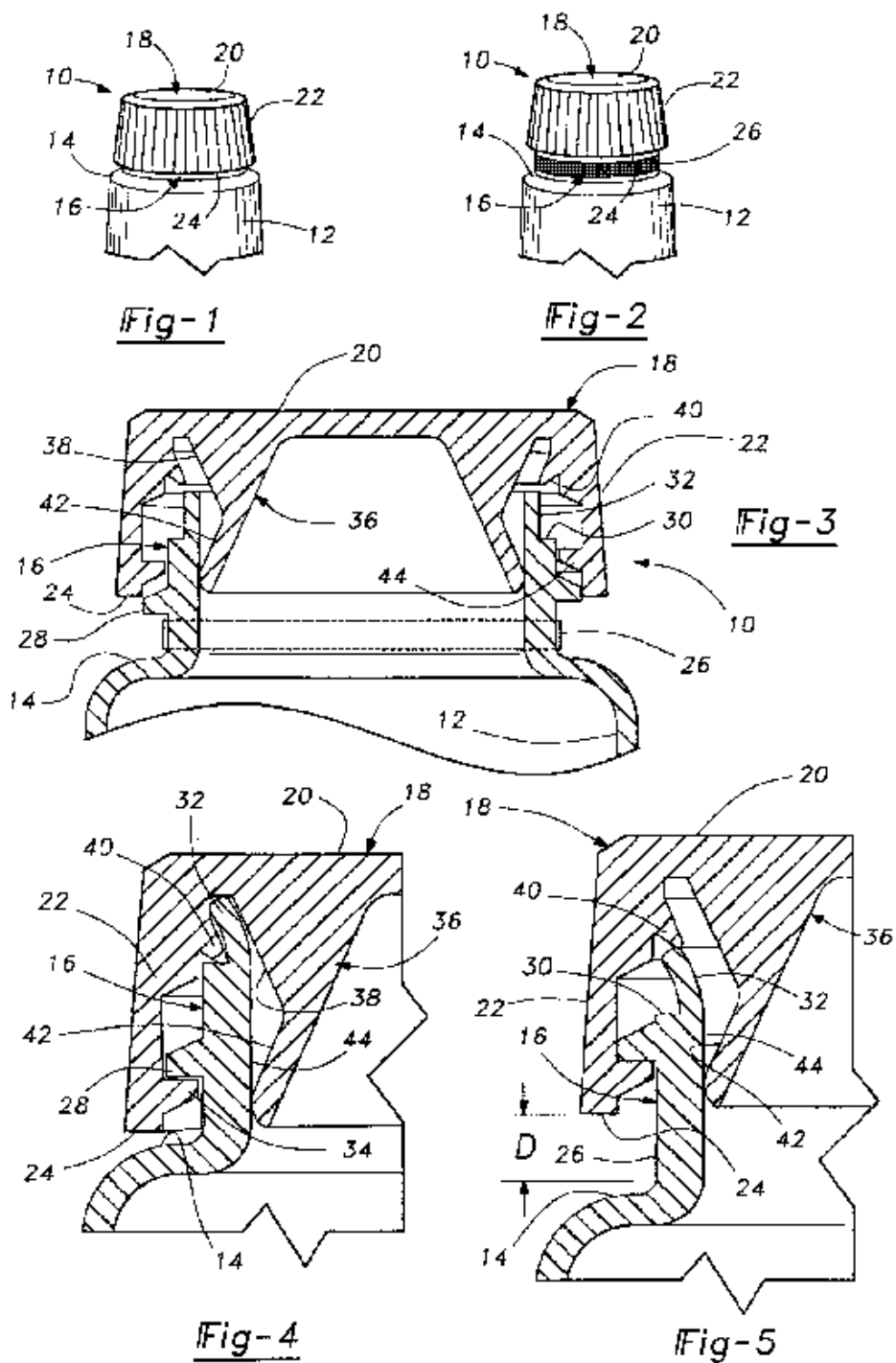
FARAGO JACQUELYN L

Family 65/100 - FAMPAT - ©Questel

Title

(US5738231)

Tamper indicating threaded closure-container package

Images**Publication numbers with kind code & date**

US5738231

A

1998-04-14

US5738231

**IPC - International classification**

B65D-055/02; B65D-055/02

Abstract

(US5738231)

A threaded tamper indicating closure-container package provides an indication of initial opening by how far the closure threads onto the container neck. In the original package condition the bottom of the closure skirt is adjacent a shoulder on the container. After the package has been initially opened and the closure reapplied, the bottom of the closure skirt is noticeably above the container shoulder. A word message such as "opened" can also be exposed on the container neck between the shoulder and the bottom of the closure skirt when the closure is reapplied.

Inventors

MONTGOMERY GARY V

Latest standardized assignees - inventors removed

BERRY PLASTICS

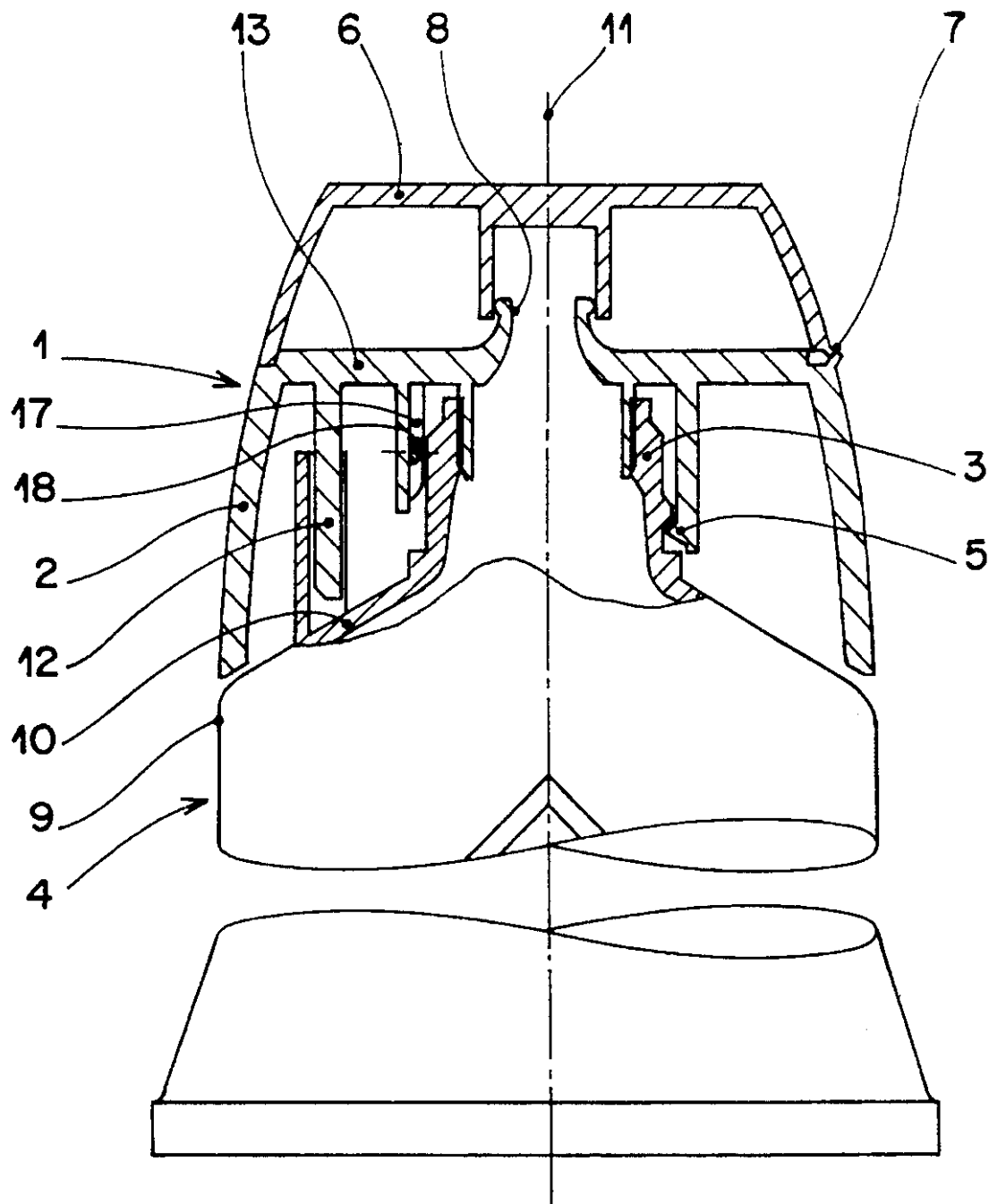
Family 66/100 - FAMPAT - ©Questel

Title

(EP-633197)

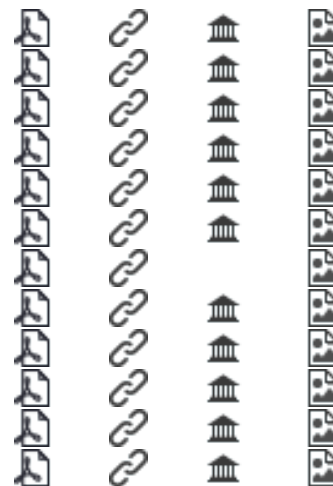
Combination of a, by relative rotation, interlocking container and closure, as well as the application of such a combination

Images



Publication numbers with kind code & date

DE69400512	T2	1997-01-23	DE69400512
GR3020988	T3	1996-12-31	GR3020988
ES2091675	T3	1996-11-01	ES2091675
DE69400512	D1	1996-10-17	DE69400512
US5560505	A	1996-10-01	US5560505
DK0633197	T3	1996-09-30	DK-633197T
AT142589	T	1996-09-15	ATE142589
EP0633197	B1	1996-09-11	EP-633197
FR2707256	B1	1995-08-11	FR2707256
FR2707256	A1	1995-01-13	FR2707256
EP0633197	A1	1995-01-11	EP-633197
CA2126402	A1	1995-01-10	CA2126402



IPC - International classification

B65D-047/08; B65D-047/20; B65D-055/02

Abstract

(EP0633197)

The invention relates to an assembly of a container and a closure, the said container having a head comprising a neck extended by a shoulder (10) which connects this neck with a body or with a skirt, the said closure and the said head respectively having complementary means (12, 14 and 15) of locking in relative position by rotation, characterised in that these means respectively consist of an elastically flexible axial blade (12) carried by the closure and of profiled axial portions (14 and 15) carried by the said shoulder (10), these portions comprising a first portion (14) for the clip-in engagement and retention of the said blade (12) and a second portion (15) which is a stop-piece for the blade (12) ensuring its retention by the first portion (14). The invention applies to the manufacture and industrial closure of containers having clip-on or screw-type closures which must be oriented accurately with respect to a decoration or to the geometry of these containers. <IMAGE>

Inventors

SCHNEIDER BERNARD

HOSLET RENE

Latest standardized assignees - inventors removed

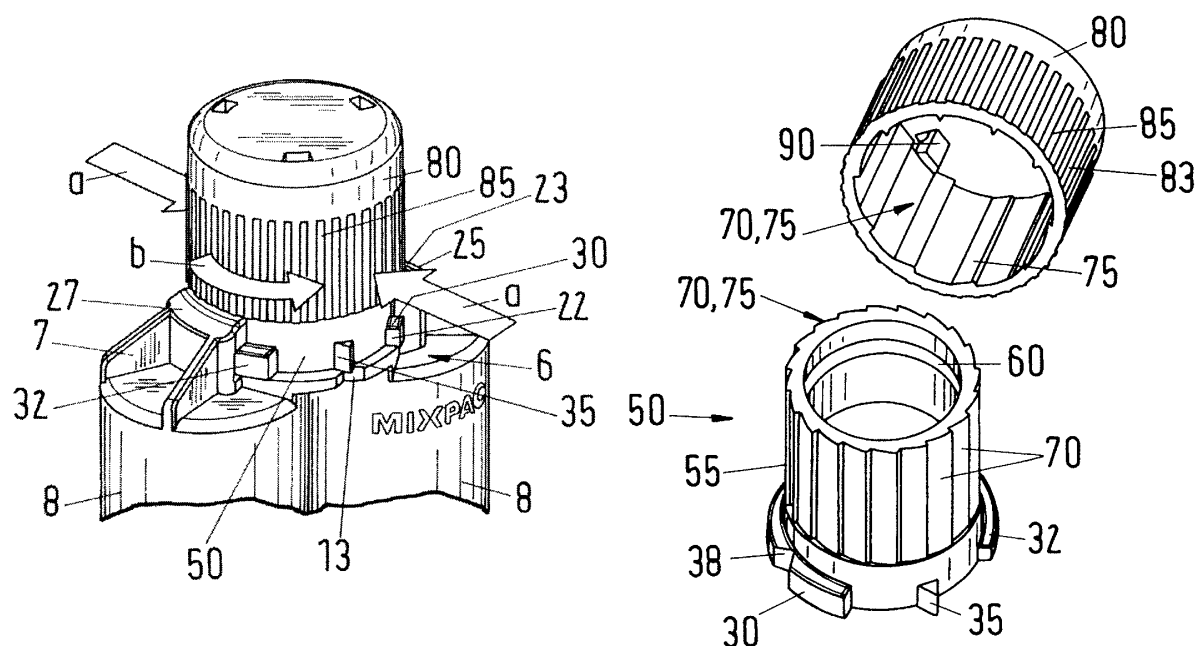
CEBAL

Family 67/100 - FAMPAT - ©Questel

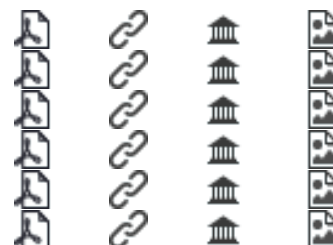
Title

(EP2428461)

Child-proof cap for an applicator

Images**Publication numbers with kind code & date**

CN102398723	B	2017-03-01	CN102398723B
US9527637	B2	2016-12-27	US9527637
IL214993	B	2014-11-30	IL-214993
US20140346133	A1	2014-11-27	US20140346133
US8833577	B2	2014-09-16	US8833577
BRPI1104608	A2	2014-02-25	BR201104608



EP2428461	B1	2013-04-10	EP2428461				
RU2011137368	A	2013-03-20	RU2011137368				
BRPI1104608	A1	2012-08-07	BR201104608				
TW201226275	A	2012-07-01	TW201226275				
CN102398723	A	2012-04-04	CN102398723				
JP2012056635	A	2012-03-22	JP2012056635				
KR20120026969	A	2012-03-20	KR20120026969				
US20120061343	A1	2012-03-15	US20120061343				
EP2428461	A1	2012-03-14	EP2428461				
CA2746283	A1	2012-03-10	CA2746283				
IL214993	A	2012-02-29	IL-214993				

IPC - International classification

A61C-005/06; B05C; B05C-017/005; B65D; B65D-006/00; B65D-025/42; B65D-035/30; B65D-039/08; B65D-041/04; B65D-041/04; B65D-041/06; B65D-050/00; B65D-050/04; B65D-050/04; B65D-081/32; B65D-083/76

Abstract

(EP2428461)

The closure has a safety cap (80) partially covering a closure element (50). The cap and the closure element are separably-fixedly rotatably connected against each other by a detent groove and spring elements. The cap is partially elastically deformably designed such that saw toothed structures of the closure element and saw toothed structures of the cap are engaged with each other by pressing the cap against the closure element. Bayonet fastening units of the closure and a discharger include a V-shaped notch (13) and V-shaped opening (23) for alignment of the closure and the discharger.

(From EP2428461 A1)

Inventors

HABIBI-NAINI SASAN

Latest standardized assignees - inventors removed

SULZER

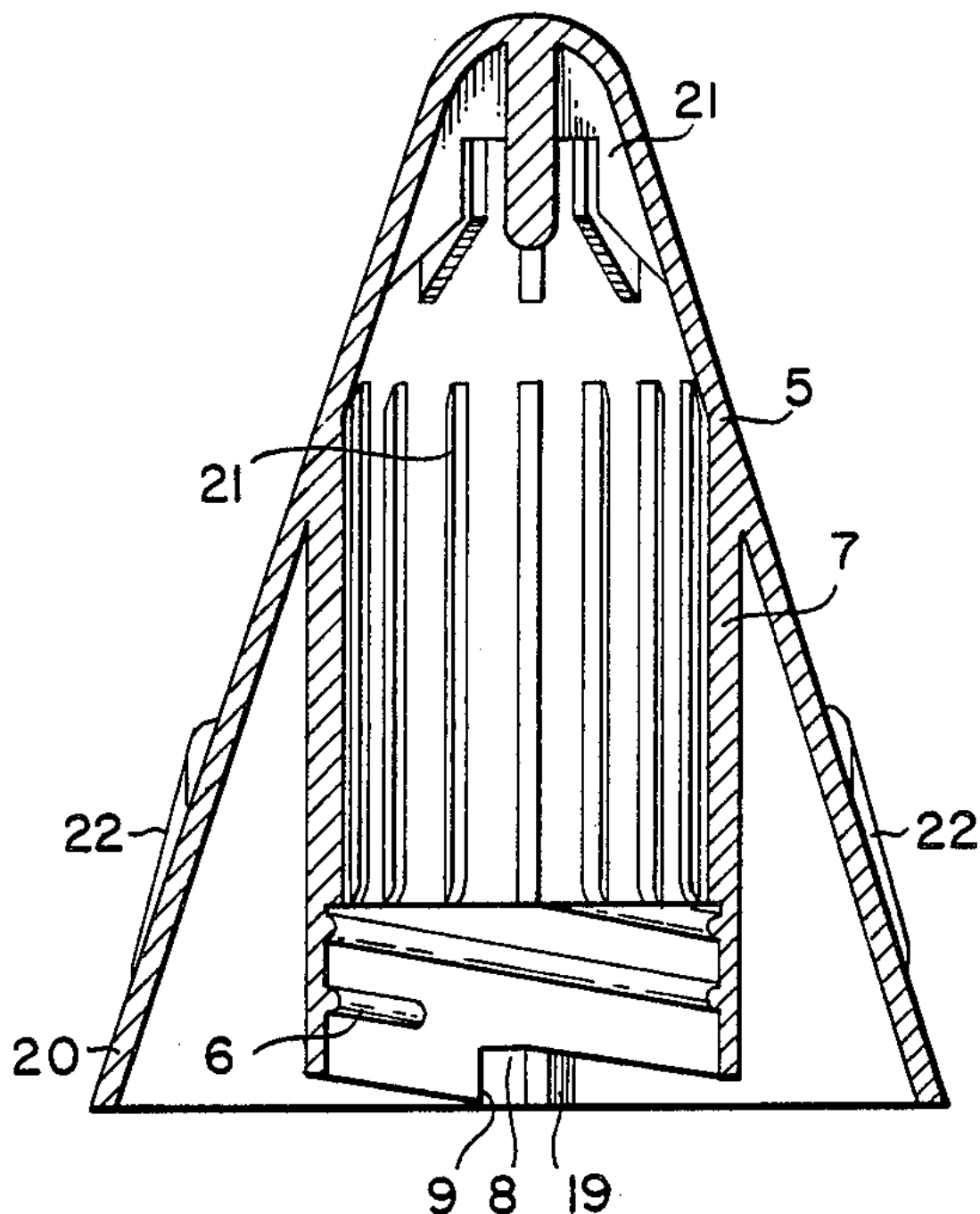
Family 68/100 - FAMPAT - ©Questel

Title

(EP-257481)

Child-proof threaded closure

Images


Publication numbers with kind code & date

IE60746	B1	1994-08-10	IE--60746
JP1780205	C	1993-08-13	JP1780205
CA1321166	C	1993-08-10	CA1321166
PT85487	B	1993-07-30	PT--85487
JPH0468229	B2	1992-10-30	JP92068229
NO168464	C	1992-02-26	NO-168464
DK161693	C	1992-02-24	DK-161693C
FI84585	C	1991-12-27	FI--84585
NO168464	B	1991-11-18	NO-168464
GR3000757	T3	1991-10-10	GR3000757
FI84585	B	1991-09-13	FI--84585
DK161693	B	1991-08-05	DK-161693
ES2016096	B3	1990-10-16	ES2016096
AU601994	B2	1990-09-27	AU-601994



DE3763180	D1	1990-07-19	DE3763180				
AT53557	T	1990-06-15	ATE053557				
EP0257481	B1	1990-06-13	EP-257481				
NZ221111	A	1990-04-26	NZ-221111				
EP0257481	A3	1988-12-28	EP-257481				
PT85487	A	1988-08-17	PT--85487				
US4756435	A	1988-07-12	US4756435				
JPS6367267	A	1988-03-26	JP63067267				
DE3629289	A1	1988-03-10	DE3629289				
AU7595987	A	1988-03-03	AU8775959				
EP0257481	A2	1988-03-02	EP-257481				
DK425987	A	1988-02-29	DK8704259				
FI873715	A	1988-02-29	FI8703715				
NO873594	L	1988-02-29	NO-873594				
IE872304	L	1988-02-28	IE8702304				
FI873715	A0	1987-08-27	FI8703715				
NO873594	D0	1987-08-26	NO8703594				
DK425987	D0	1987-08-14	DK8704259				

IPC - International classification

B65D-050/04; B65D-055/02; B65D-055/02; B65D-055/12

Abstract

(EP0257481)

The present invention provides a non-strippable, child-proof screw closure for containers, and especially for storage bottles containing cleaning liquids, comprising a pourer arranged on the container having external threads and radially extending stops formed thereon, and a screw cap with catches which can be opened out by the stops. The screw cap has a separate internal threaded piece.

(From US4756435 A)

Inventors

SCHICK, JURGEN

KASCHEWSKI, BERND

EHRENFRIED. KURT

Latest standardized assignees - inventors removed

RECKITT BENCKISER

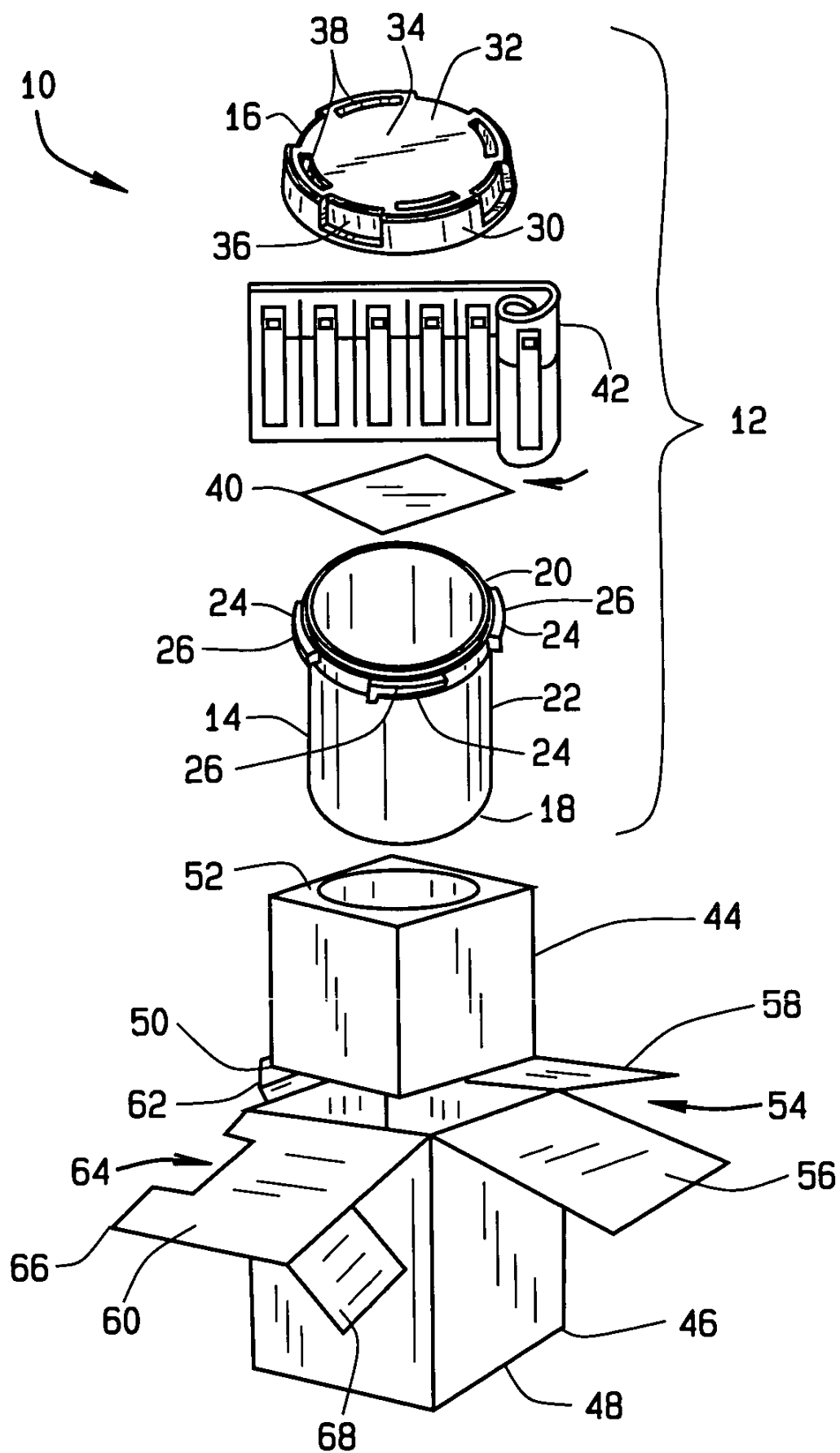
Family 69/100 - FAMPAT - ©Questel

Title

(WO200534834)

Methods and apparatus for shipping medical substances

Images



Publication numbers with kind code & date

US7036672	B2	2006-05-02	US7036672
WO2005/034834	A2	2005-04-21	WO200534834
US20050072124	A1	2005-04-07	US20050072124

**IPC - International classification**

B65D-043/02; B65D-043/02; B65D-055/02; B65D-055/02; B65D-077/04; B65D-077/24

Abstract

(WO2005/034834)

A packaging system includes an elongate vessel and a lid. The vessel includes a bottom wall, a top surface, and a cylindrical body between the top surface and bottom wall. The body includes an outer surface, a tapered inner surface, and a vertical portion. The vertical portion extends between the tapered inner surface and the top surface. The vessel further includes a plurality of locking tabs formed on the outer surface. The lid includes a cylindrical body, an interior perimeter and an inner surface, and an inner sealing ring extending from the inner surface and configured to engage and seal against the vertical portion of the elongate vessel. The lid also includes an outer sealing ring extending down from the inner surface and out from the interior perimeter, a plurality of tab receptacles positioned within the lid cylindrical body, and a plurality of notches within the cylindrical body positioned between the plurality of tab receptacles. The tab receptacles are configured to receive the plurality of locking tabs.

Inventors

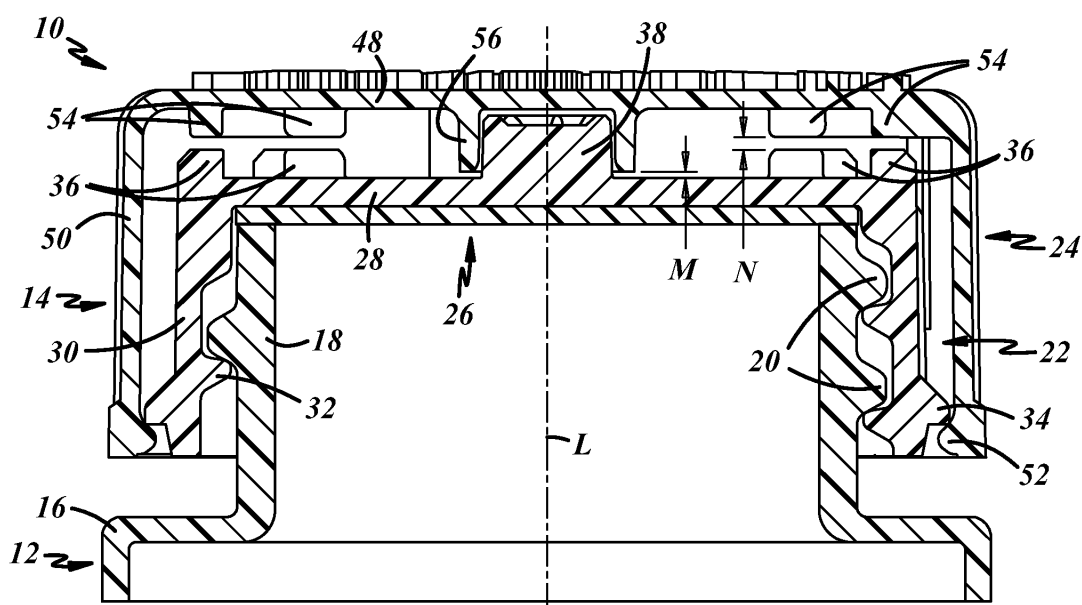
JAYCOX DONALD L

Family 70/100 - FAMPAT - ©Questel

Title

(EP2646336)

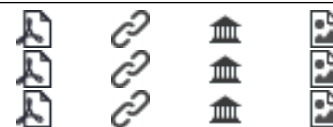
Push-and-turn child-resistant closure, shells, and package

Images**Publication numbers with kind code & date**

BR112013011359	A2	2016-08-02	BR112013011359
IN4132/CHENP/2013	A	2016-06-10	IN2013CN04132
US8857638	B2	2014-10-14	US8857638
BR112013011359	A1	2014-01-07	BR112013011359
EP2646336	A1	2013-10-09	EP2646336



CN103328339	A	2013-09-25	CN103328339
US20120138561	A1	2012-06-07	US20120138561
WO2012/075405	A1	2012-06-07	WO201275405

**IPC - International classification**

B65D-035/44; B65D-035/44; B65D-050/04; B65D-050/04; B65D-050/06

Abstract

(EP2646336)

A child- resistant closure includes an inner shell (22) having an inner base wall (28) with an inner skirt (30), external lugs (36) on the inner base wall, at least one internal thread segment (32) on the inner skirt, at least one ramp (40) extending axially along an external surface of the inner skirt and radially outwardly from the inner skirt, and a detent (42) on an outer periphery of the inner skirt extending axially along the inner skirt and radially outwardly from the inner skirt adjacent to the ramp and spaced from the ramp in a counterclockwise direction around the inner skirt. The closure also includes an outer shell (24) having an outer base wall (48) with an outer skirt (50) surrounding the inner skirt of the inner shell, internal lugs (54) on the outer base wall, and at least one flexible resilient spring finger (58) extending axially inwardly at a counterclockwise angle from an inner periphery of the inner skirt. The lugs (36, 54) can be positioned to support the outer shell (24) on the inner shell (22).

Inventors

BROZELL BRIAN JOHN

Latest standardized assignees - inventors removed

BPRES HEALTHCARE PACKAGING

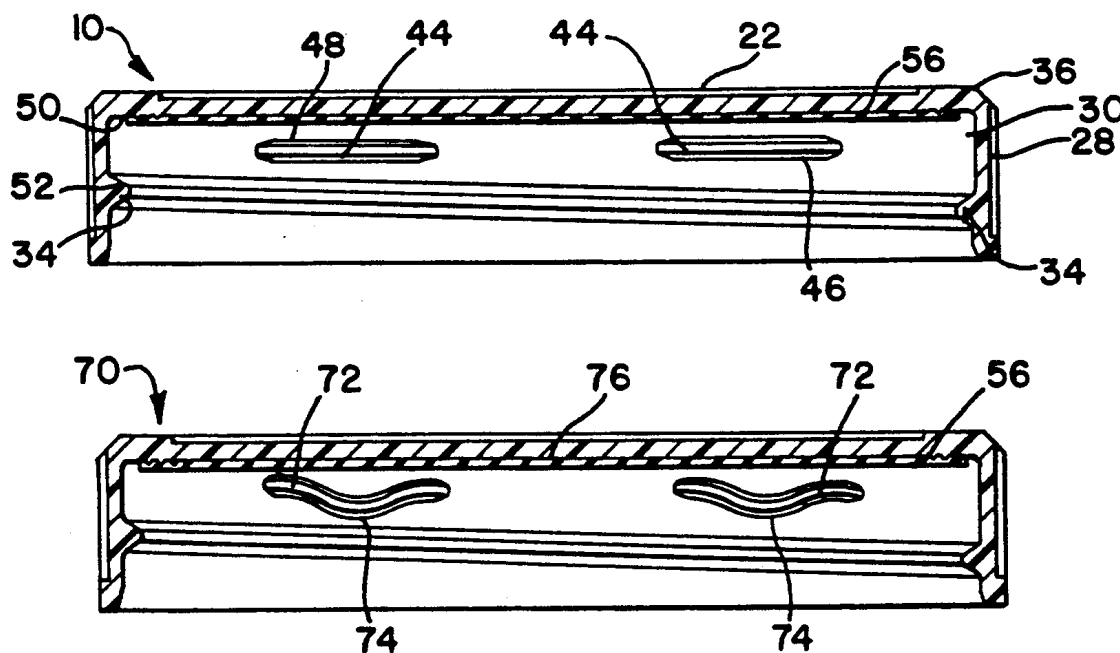
BPRES HEALTHCARE BROOKVILLE

Family 71/100 - FAMPAT - ©Questel

Title

(US5292020)

Closure with anti-backoff feature

Images**Publication numbers with kind code & date**

US5292020	A	1994-03-08	US5292020
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**IPC - International classification**

B65D-041/04; B65D-041/04

Abstract

(US5292020)

A backoff resistant closure for use with a container having a neck portion with container threads integrally formed thereon, the container threads having an uppermost portion. At least one protuberance is integrally formed on the inner surface of the annular skirt of the closure which projects inwardly. The protuberance is spaced from the uppermost segment of the closure threading and positioned between the uppermost segment of the closure threading and the inner face of the top portion of the closure. The protuberance is configured to abut and provide a frictional retaining force against the uppermost portion of the container threads. The protuberance will also retain a closure liner within the closure.

Inventors

NAIRN JAMES F

Latest standardized assignees - inventors removed

PHOENIX CLOSURES

Family 72/100 - FAMPAT - ©Questel

Title

(US3396864)

Safety cap structure

Images

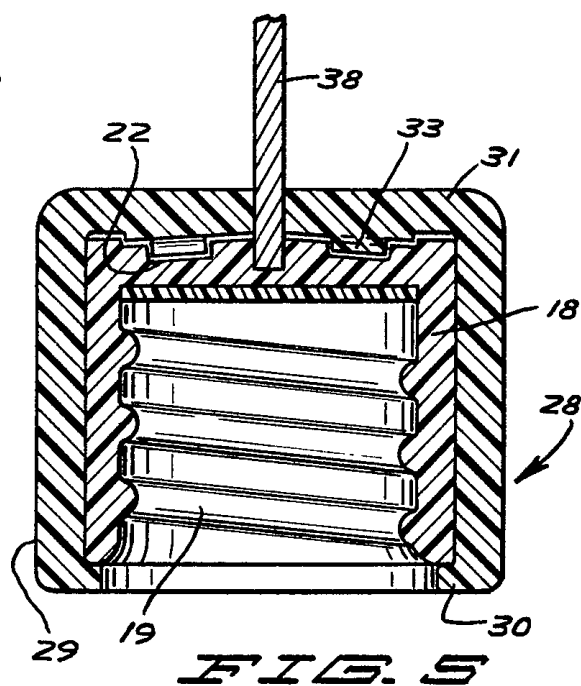
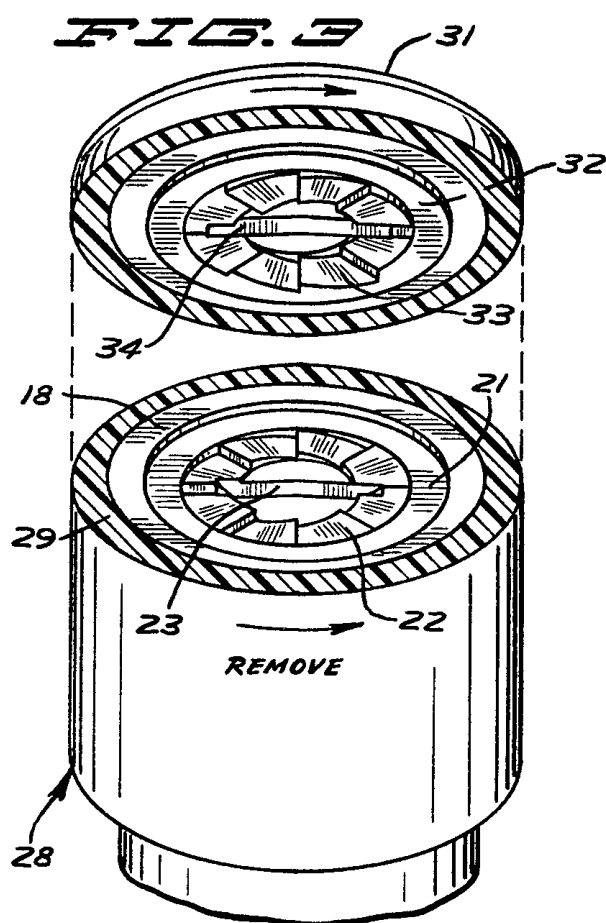
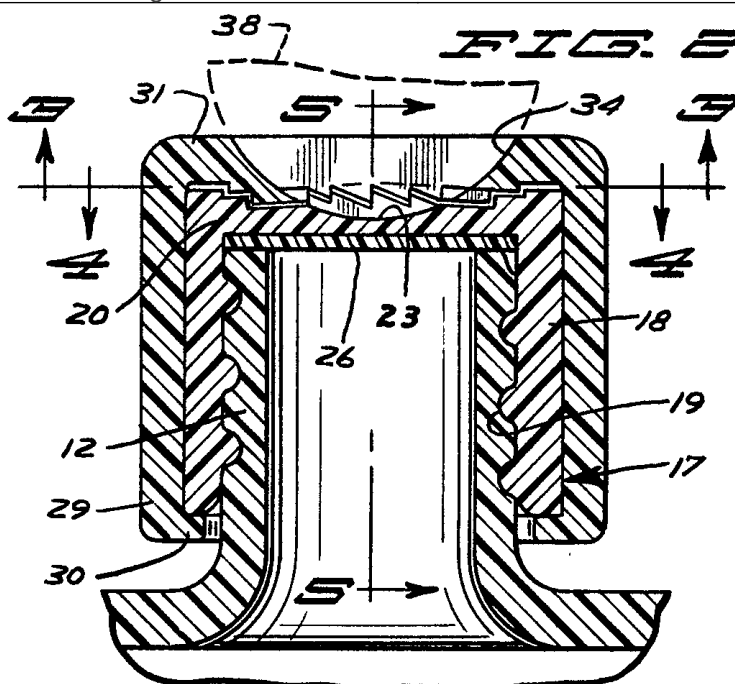
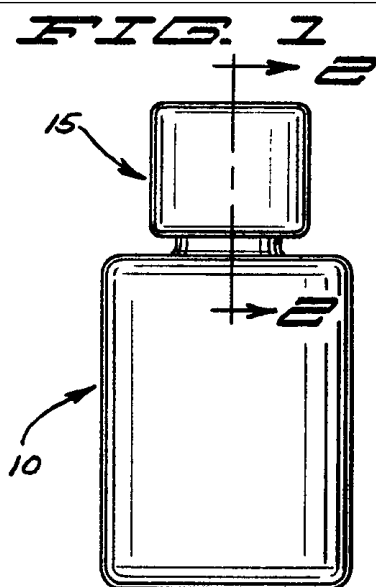


FIG. 4

INVENTOR.
FREDERICK E. JONES
JOHN V. KNIGHT
 BY *Reif and Gregory*
 ATTORNEYS

Publication numbers with kind code & date

US3396864

A 1968-08-13

US3396864

IPC - International classification

B65D-050/06; B65D-050/06

Inventors

JONES FREDERICK E

KNIGHT JOHN V

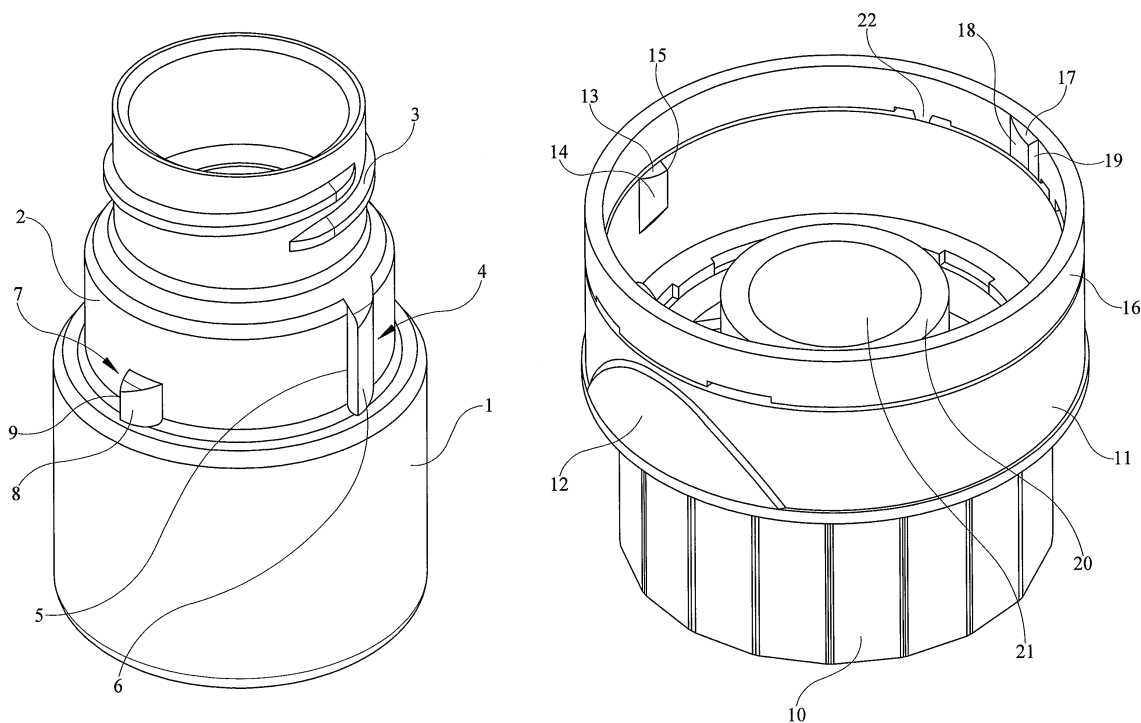


Family 73/100 - FAMPAT - ©Questel

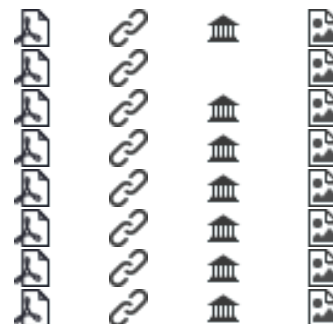
Title

(EP2170719)

Child-safe closure device with screw and collar for revealing first opening

Images**Publication numbers with kind code & date**

US8302792	B2	2012-11-06	US8302792
AT520602	T	2011-09-15	ATE520602
EP2170719	B1	2011-08-17	EP2170719
US20100206877	A1	2010-08-19	US20100206877
EP2170719	A1	2010-04-07	EP2170719
FR2918041	B1	2009-09-25	FR2918041
FR2918041	A1	2009-01-02	FR2918041
WO2009/000616	A1	2008-12-31	WO2009000616

**IPC - International classification**

B65D-041/34; B65D-041/34; B65D-050/00; B65D-050/04; B65D-051/30; B65D-055/12

Abstract

(EP2170719)

The invention relates to a child-safe closure device for a container (1), consisting of: i) a stopper having a base and a cylindrical side wall, the inside face of which has a screwthread and a first series of teeth (13), and ii) a collar (16) for revealing the first opening, said collar (16) being connected to said side wall and being equipped with a second series of teeth (17), these two series of teeth engaging with corresponding series of teeth (4, 7) positioned on the base of the neck (2) of the container (1), which is characterized in that: a) the cylindrical side wall of the stopper is made up of two zones, one rigid (10), and the other, or skirt (11), being flexible and deformable, b) the collar (16) for revealing the first opening is attached to the skirt (11) by frangible bridges (22), in such a way that deformation of the skirt (11) does not result in an equivalent deformation of the collar (16).

Inventors

LOGEL VALERE

SEBILLE VINCENT

Latest standardized assignees - inventors removed

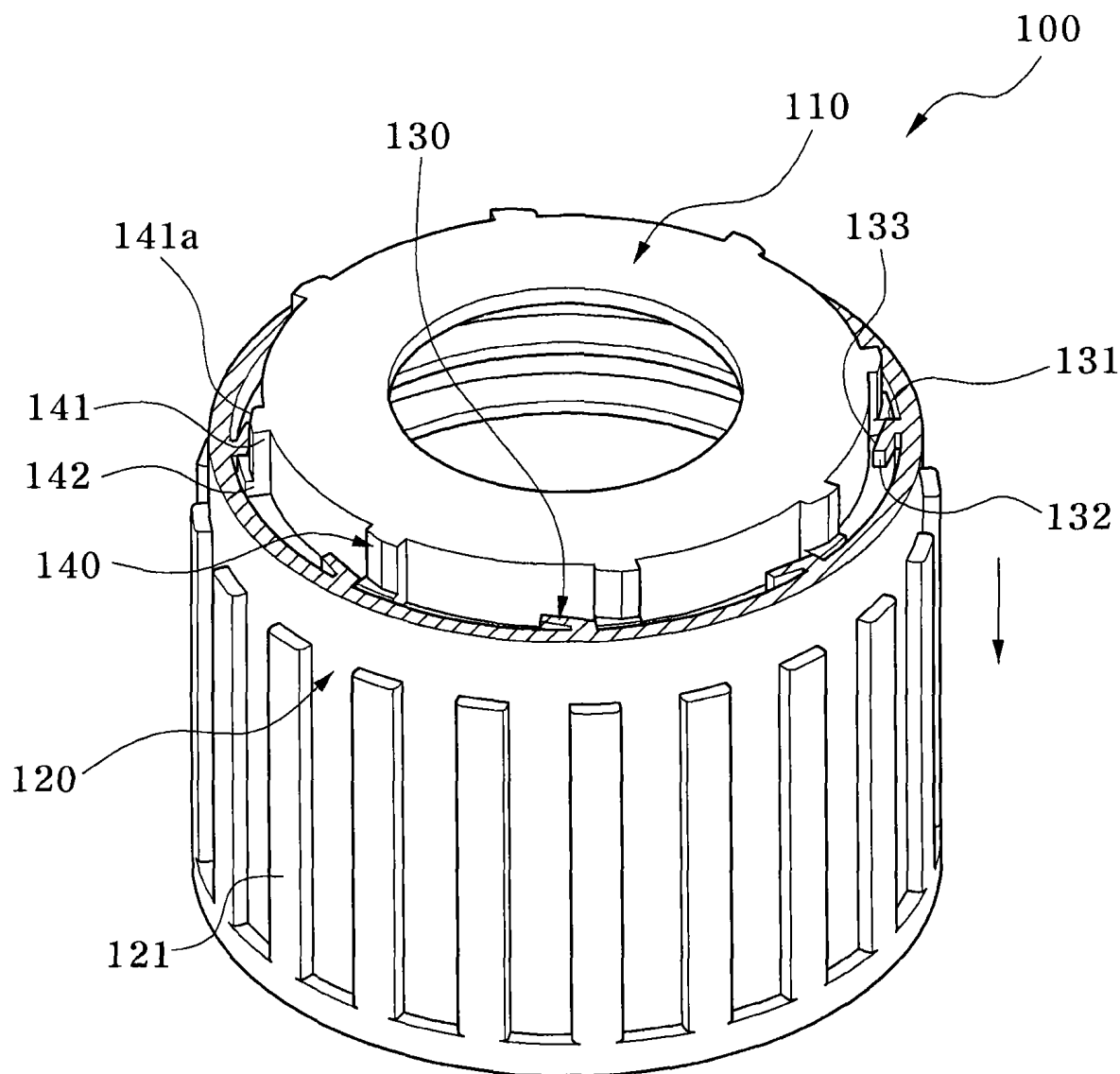
CLARIANT

Family 74/100 - FAMPAT - ©Questel

Title

(CN201158499U)

Cap for container

Images**Publication numbers with kind code & date**[CN201158499](#)

Y

2008-12-03

CN201158499U

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(CN201158499)

The utility model discloses a cap for a container, which has an improved internal structure to prevent the cap from being opened by children or persons unfamiliar with the operation method. The technical scheme is that the cap for the container comprises an inner cap bonded with the container; a plurality of step-like hook sections arranged on the outer peripheral surface of the inner cap and including an upper hook and a lower hook which protrudes outwards more than the lower hook; an outer cap arranged on the outer side of the inner cover and installed at a certain distance in such a manner that the outer cap is tightly connected with the inner cap and moves up and down; and a plurality of fork sections arranged on the inner side of the outer cap and formed in such a manner that one side of the fork sections are inclined to the inner cap. The cap for a container can prevent unnecessary waste of inner mass and can prevent the occurrence of safety accident.

resulting from drugs harmful to human body such as hydrochloric acid and pesticides in advance.

Inventors

JIN TAIXIAN

Latest standardized assignees - inventors removed

XI ANSI PLASTIC PRODUCT

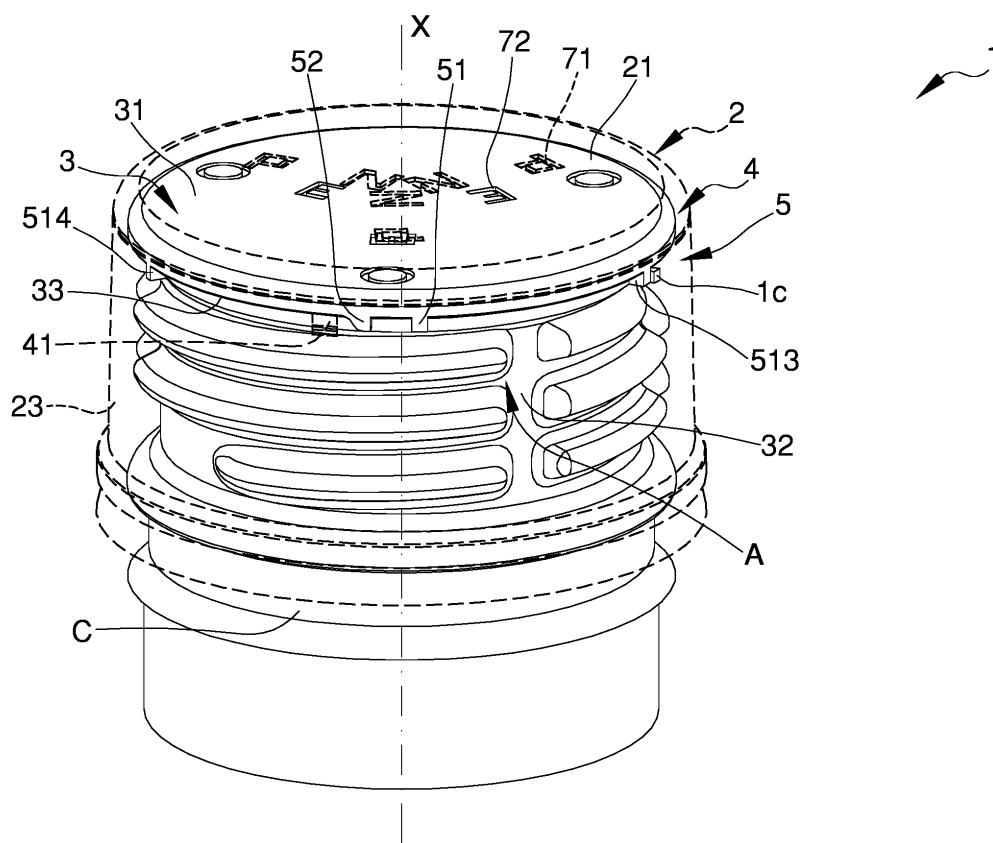
Family 75/100 - FAMPAT - ©Questel

Title

(EP3038942)

Safety capsule for containers

Images



Publication numbers with kind code & date

US10392173	B2	2019-08-27	US10392173
ZA201600628	B	2019-04-24	ZA201600628
HUE040365	T2	2019-03-28	HUE040365
TR201819474	T4	2019-01-21	TR201819474
EP3330198	B1	2018-11-28	EP3330198
HUE038551	T2	2018-10-29	HUE038551
RU2663403	C2	2018-08-03	RU2663403
RU2662669	C2	2018-07-26	RU2662669
US10011408	B2	2018-07-03	US10011408
EP3330198	A1	2018-06-06	EP3330198
CN105452121	B	2018-05-04	CN105452121B
EP3038943	B1	2018-03-07	EP3038943
HUE034679	T2	2018-02-28	HUE034679
EP3038942	B1	2017-11-08	EP3038942
RU2016102727	A	2017-10-02	RU2016102727
RU2016102728	A	2017-10-02	RU2016102728



CN105452122	B	2017-09-08	CN105452122B				
BR112016002855	A2	2017-08-01	BR112016002855				
BR112016002859	A2	2017-08-01	BR112016002859				
EP3038942	A1	2016-07-06	EP3038942				
EP3038943	A1	2016-07-06	EP3038943				
US20160159536	A1	2016-06-09	US20160159536				
US20160159537	A1	2016-06-09	US20160159537				
IN201637004011	A	2016-06-03	IN201637004011				
MX2016001995	A	2016-05-18	MX2016001995				
MX2016001996	A	2016-05-18	MX2016001996				
IN201637002512	A	2016-04-08	IN201637002512				
CN105452121	A	2016-03-30	CN105452121				
CN105452122	A	2016-03-30	CN105452122				
BR112016002855	A1	2016-02-23	BR112016002855				
BR112016002859	A1	2016-02-23	BR112016002859				
WO2015/028959	A1	2015-03-05	WO201528959				
WO2015/028979	A1	2015-03-05	WO201528979				
ITMO20130242	A1	2015-03-01	IT2013MO0242				

IPC - International classification

B65D-041/04; B65D-041/04; B65D-041/34; B65D-055/00; B65D-055/00; B65D-055/02; B65D-055/02

Abstract

(EP3038942)

A safety capsule for containers, comprising: an external cap (2), provided with coupling means for the coupling thereof to the neck (C) of a container; an internal element (3), located inside the external cap (2) and configured to be associated, in a removable manner, with an opening (A) of the container; connecting means (4, 5), interposed between the external cap (2) and the internal element (3), and structured so as to leave the external cap (2) and the internal element (3) unconstrained with respect to a movement for opening or removal of the external cap (2) between a closed position and an intermediate position, and solidly constrain the external cap (2) and the internal element (3) with respect to the movement for opening or removal of the external cap (2) between the intermediate position and an opening position.

Inventors

PUCCI FABRIZIO

Latest standardized assignees - inventors removed

SACMI

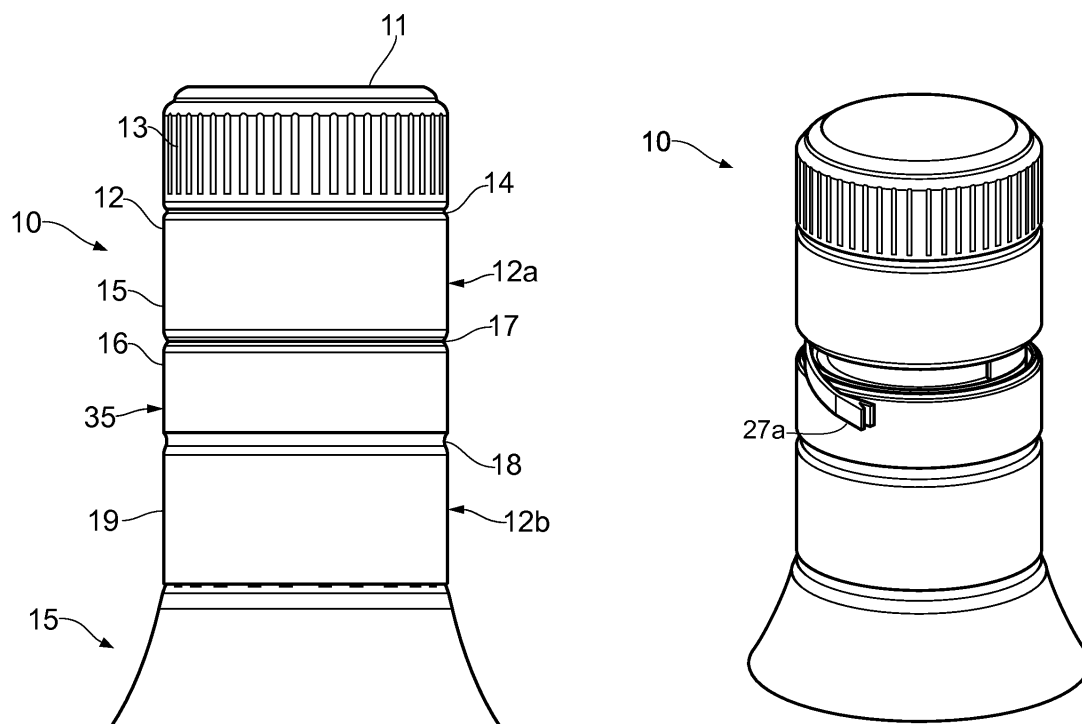
Family 76/100 - FAMPAT - ©Questel

Title

(EP2776335)

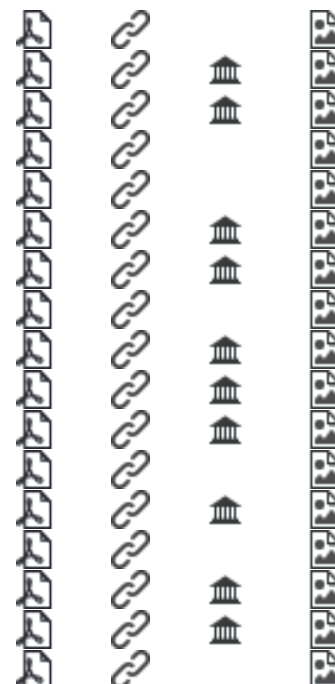
A tamper evident closure

Images



Publication numbers with kind code & date

PL2776335	T3	2018-08-31	PL2776335
ES2665043	T3	2018-04-24	ES2665043
EP2776335	B1	2018-01-24	EP2776335
RU2636376	C2	2017-11-22	RU2636376
MX349083	B	2017-07-10	MX-349083
JP6068489	B2	2017-01-06	JP6068489
CN103906689	B	2016-02-17	CN103906689B
RU2014115230	A	2015-12-20	RU2014115230
US9033169	B2	2015-05-19	US9033169
JP2014534136	A	2014-12-18	JP2014534136
EP2776335	A1	2014-09-17	EP2776335
MX2014005511	A	2014-07-09	MX2014005511
CN103906689	A	2014-07-02	CN103906689
CO6950457	A2	2014-05-20	CO6950457
US20140048537	A1	2014-02-20	US20140048537
WO2013/068750	A1	2013-05-16	WO201368750
GB201119311	D0	2011-12-21	GB201119311



IPC - International classification

B65D-041/34; B65D-041/34; B65D-041/48; B65D-041/62; B65D-047/12; B65D-047/12; B65D-047/14; B65D-047/36; B65D-049/04; B65D-051/18; B65D-055/02; B65D-055/02

Abstract

(EP2776335)

A tamper-evident closure (10) for a container is provided. The closure comprises a first portion (12a) and a second portion (12b), the first portion being connected or connectable to the second portion and removable therefrom. The closure (10) is movable upon first opening from a first position in which the portions are in a first relative relation to a second position in which they are in a second relation. The closure (10) comprises means for preventing the portions from returning to the first position. The closure (10) comprises a removable retention member (27) which attaches the first (12a) and second portions (12b) together such that the member (27) must be removed before the portions can be separated from each

other.

Inventors

MCPHERSON ALEXANDER DONALD MEIKLEM

Latest standardized assignees - inventors removed

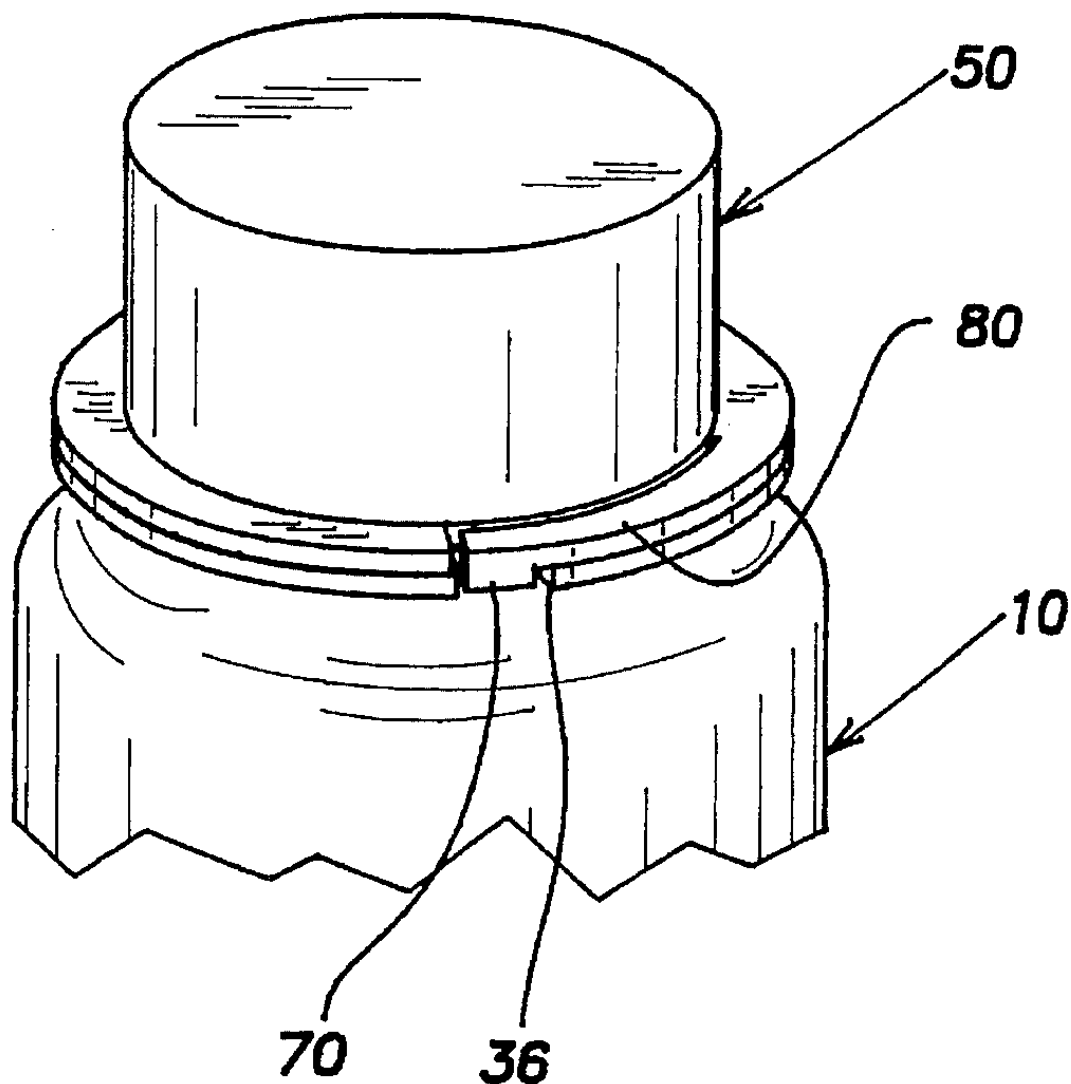
OBRIST CLOSURES SWITZERLAND

Family 77/100 - FAMPAT - ©Questel

Title

(US5462182)

Screws-on child resistant consumer-friendly closure

Images**Publication numbers with kind code & date**

[US5462182](#)

A

1995-10-31

US5462182

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US5462182)

A child resistant closure or cap for use on a container having a threaded, shouldered neck is disclosed. Complimentary locking means on the cap and container shoulder and a resilient release tab are provided. In one embodiment the cap includes an internally threaded cylindrically-shaped skirt having a radially extending flange portion at a bottom edge. The container shoulder has a recess formed therein and is adapted to be adjacent the cap flange portion when the cap is fully

threaded onto the container neck. A downwardly extending protrusion is formed on a bottom surface of the flange portion and cooperatively engages the recess when the cap is fully threaded onto the container neck to prevent rotational removal of the cap. The protrusion is located on the resilient release tab which is formed by a circumferential slit and a perpendicular slit, whereby the release tab is upwardly or axially deflectable to disengage the protrusion from the recess and permit rotational removal of the cap. In another embodiment, the cap has a lower edge in which a release tab is arranged to be operated radially for engagement and release.

Inventors

OPRESCO OVIDIU

Latest standardized assignees - inventors removed

WEATHERCHEM

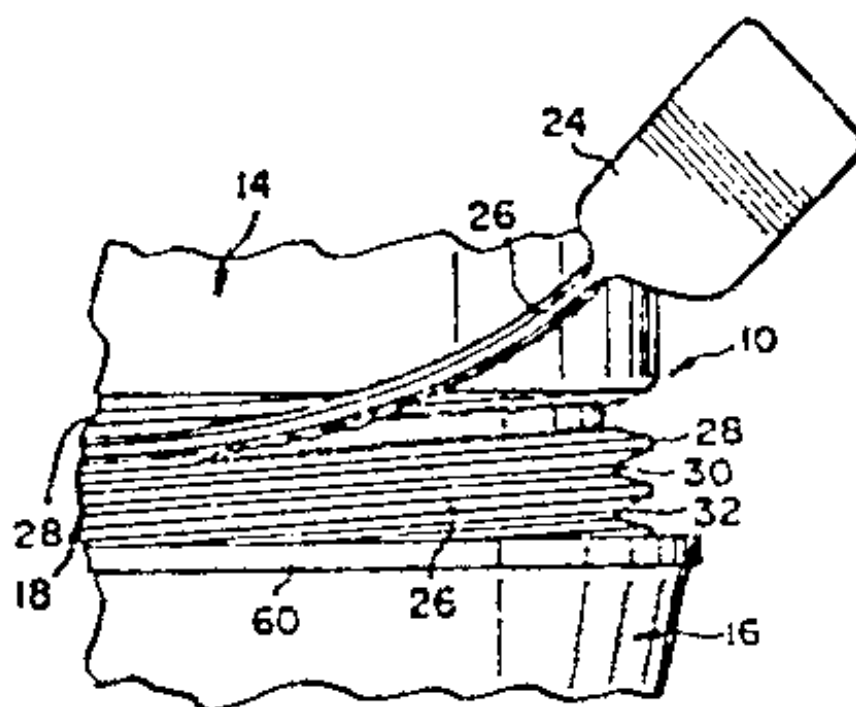
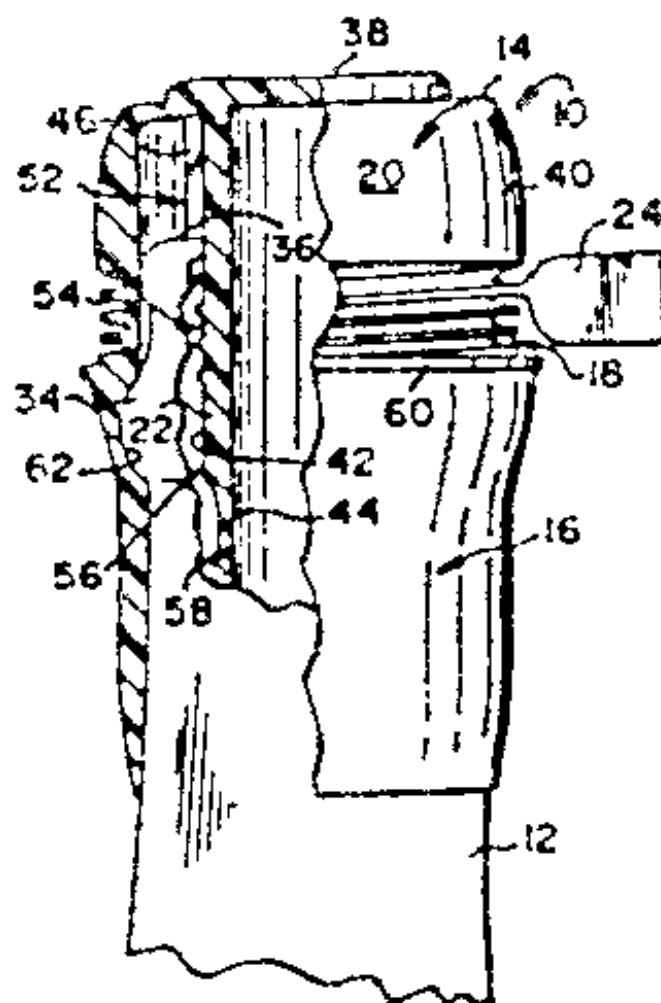
Family 78/100 - FAMPAT - ©Questel

Title

(EP-141611)

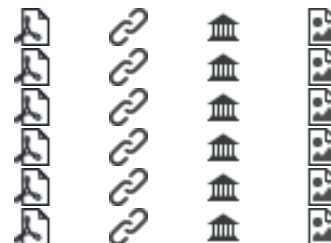
Safety champagne cork

Images



Publication numbers with kind code & date

ES291780	Y	1987-01-16	ES-291780Y
EP0141611	A3	1986-08-20	EP-141611
ES291780	U	1986-05-16	ES-291780U
EP0141611	A2	1985-05-15	EP-141611
AU3471784	A	1985-05-09	AU8434717
US4474302	A	1984-10-02	US4474302

**IPC - International classification**

B65D-039/00; B65D-041/48

Abstract

(EP0141611)

A molded tethered safety closure device for use on bottles (12) containing pressurized liquids such as champagne or sparkling wines comprising a cork or closure element (14) and a retainer collar (16) joined by an intercoupling section (18). The intercoupling section is comprised of a tabbed tear strip (26) and a tether strip (28) that are integrally formed in a helical configuration extending from the cork (14) to the collar (16). The tether strip and the tear strip are interconnected by a pair of grooved frangible webs (30, 32) that can be torn by pulling on the tear strip. This allows the tear strip to be manually removed from the intercoupling section. Following removal of the tear strip, the helical tether strip (28) interconnects the cork (14) and the retainer collar (16), thus enabling the cork to be released from the bottle without flying free.

Inventors

GOLDBERG, JAMES ROBERT

KURTZ, ALBERT J.

Latest standardized assignees - inventors removed

GOLDBERG JAMES ROBERT

Family 79/100 - FAMPAT - ©Questel

Title

(EP1100727)

Security closure for bottles

Images

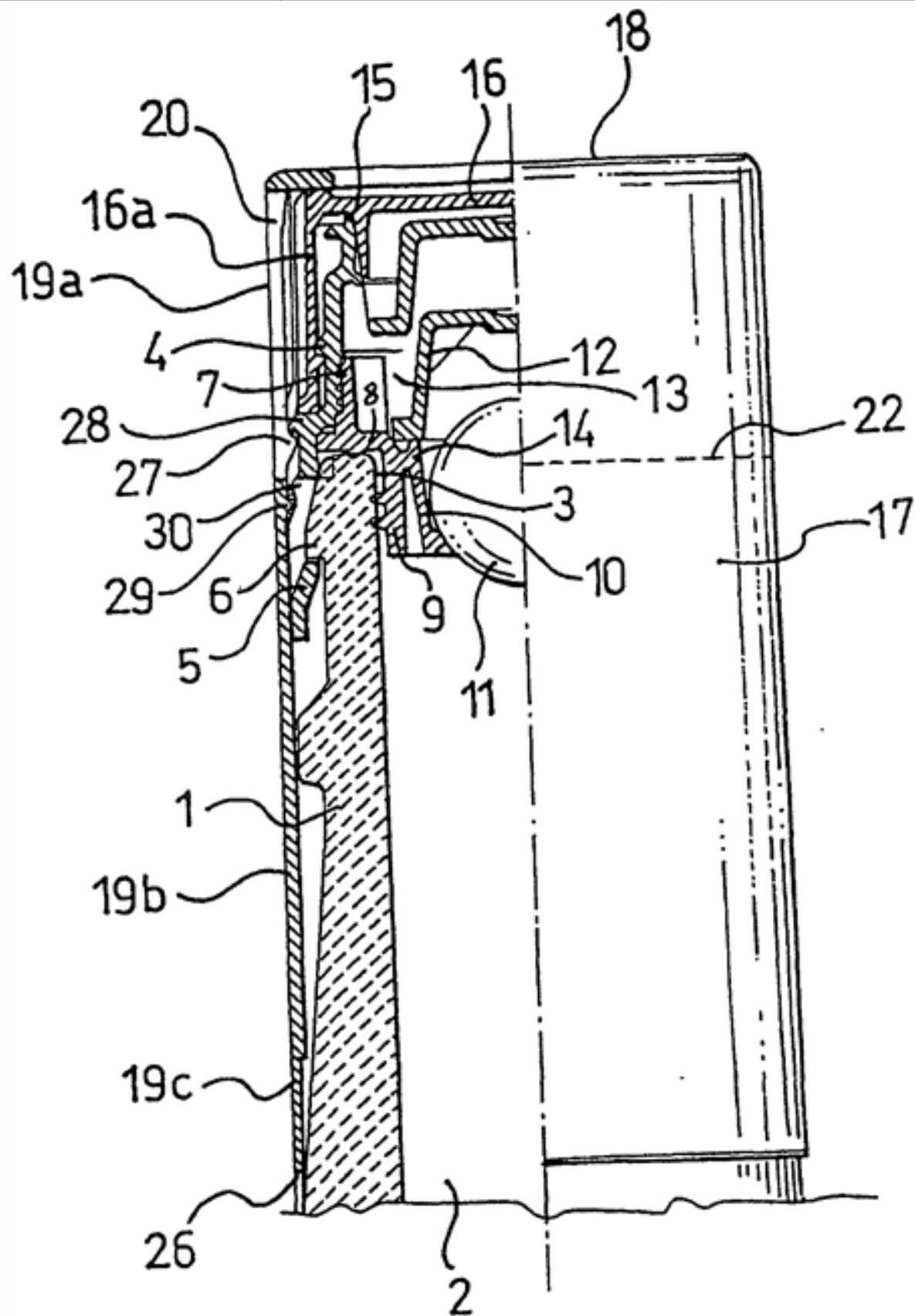


FIG 1

Publication numbers with kind code & date

IN220928	B	2008-07-18	IN-220928
IN0135/CHENP/2001	A	2007-08-31	IN2001CN00135
KR100582329	B1	2006-05-23	KR100582329
ES2217800	T3	2004-11-01	ES2217800



DE69915302	D1	2004-04-08	DE69915302				
AT260824	T	2004-03-15	ATE260824				
EP1100727	B1	2004-03-03	EP1100727				
RU2204511	C2	2003-05-20	RU2204511				
CN1098199	C	2003-01-08	CN1098199C				
MXPA01001122	A	2002-04-24	MXPA01001122				
CN1311744	A	2001-09-05	CN1311744				
KR20010072125	A	2001-07-31	KR20010072125				
EP1100727	A1	2001-05-23	EP1100727				
BR9912669	A	2001-05-02	BR9912669				
CO4980910	A1	2000-11-27	CO4980910A1				
IT1301982	B1	2000-07-20	IT1301982				
AU5619099	A	2000-02-28	AU9956190				
WO00/07898	A1	2000-02-17	WO200007898				
ITMI981807	A1	2000-01-31	IT98MI1807				
ITMI981807	D0	1998-07-31	IT98MI1807				

IPC - International classification

B65D-023/08; B65D-041/32; B65D-041/62; B65D-041/62; B65D-049/04

Abstract

(EP1100727)

A closure device for a container (2) for liquids comprising a pouring member (4) which has an internal cavity (13) and a pouring opening (15) and which is positioned on the mouth (3) and extends coaxially relative to the neck (1), a closure member (12) disposed in the cavity (13) of the pouring member (4) and movable axially relative to an annular abutment (14) to allow the liquid to come out and to prevent fraudulent admission of liquid, a cap (16) for opening and closing the pouring opening (15) as well as removable sealing means for permitting initial opening of the cap (16). The device comprises a sealing cover (17) fitted on the cap (16) and extending axially, with a sleeve (19) from the top of the cap (16) beyond the region in which the pouring member (4) bears on the neck (1) of the container, the cover (17) having at least one pair of weakening lines (20, 21) for the tearing of the region (23) disposed between the lines, at least one weakening line (22) which extends circumferentially around the sleeve (19) intersecting at least one of the lines constituting the pair of axial lines (20, 21), a tab (24) of the cover being provided at the top (18), adjacent the cap (16), for the pulling of the region (23).

Inventors

BATTEGAZZORE PIERO

Latest standardized assignees - inventors removed

GUALA CLOSURES

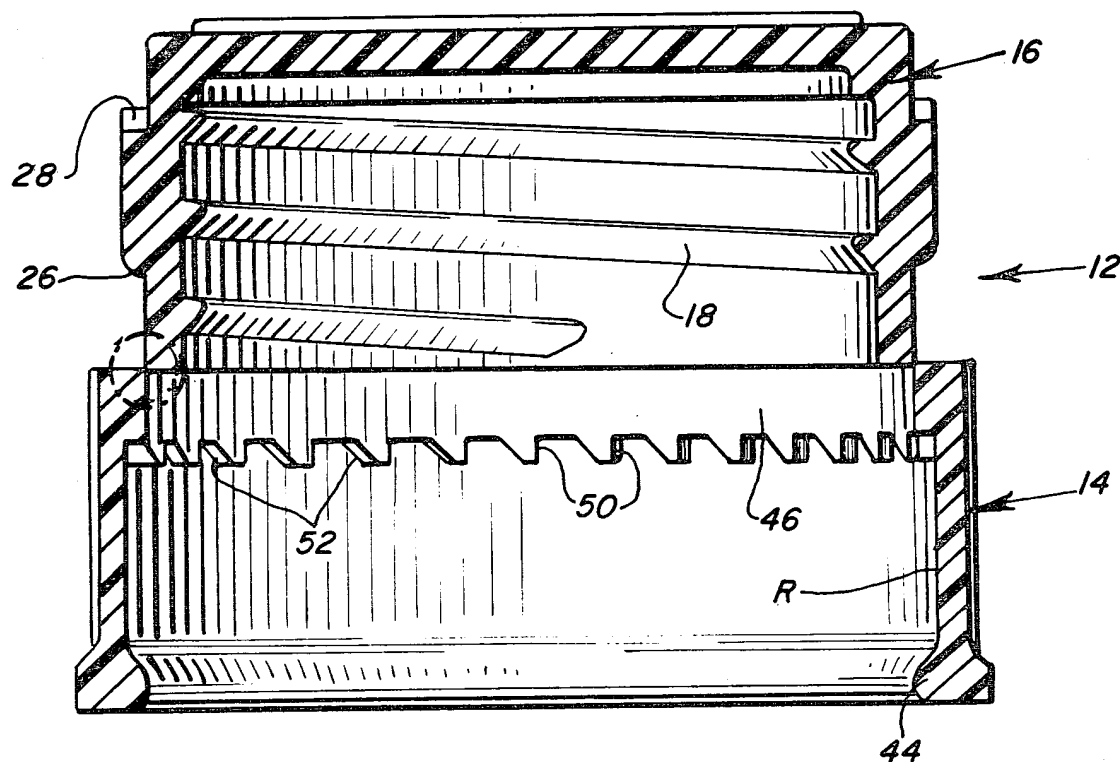
Family 80/100 - FAMPAT - ©Questel

Title

(US4364484)

Child resistant closure

Images

**Publication numbers with kind code & date**[US4364484](#)

A

1982-12-21

US4364484

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US4364484)

An improved two-piece child resistant closure formed from an integrally molded assembly. An integrally molded closure portion connected to a collar portion by a frangible web, is adapted to be forced into an open-topped collar portion. The collar portion defines a recess to receive a closure clutch ring having a greater diameter than the recess defining portions of the collar portion, thereby to retain the closure and collar portions in assembled relationship. The clutch ring defines teeth on its upper surface and the collar portions defines complementary downwardly forcing teeth. The leading edges of the teeth which cooperate in the screw-on mode are generally vertical, and the trailing edges of the teeth which cooperate in the screw-off mode are inclined at a substantial angle to the vertical, whereby unless substantial downward force is exerted in the screw-off mode, the collar teeth are cammed upwardly by the closure teeth to defeat unscrewing of the closure.

Inventors

KINSLEY JOHN P

Latest standardized assignees - inventors removed

SEAQUIST VALVE

TOP SEAL

SEAQUIST CLOSURES FOREIGN

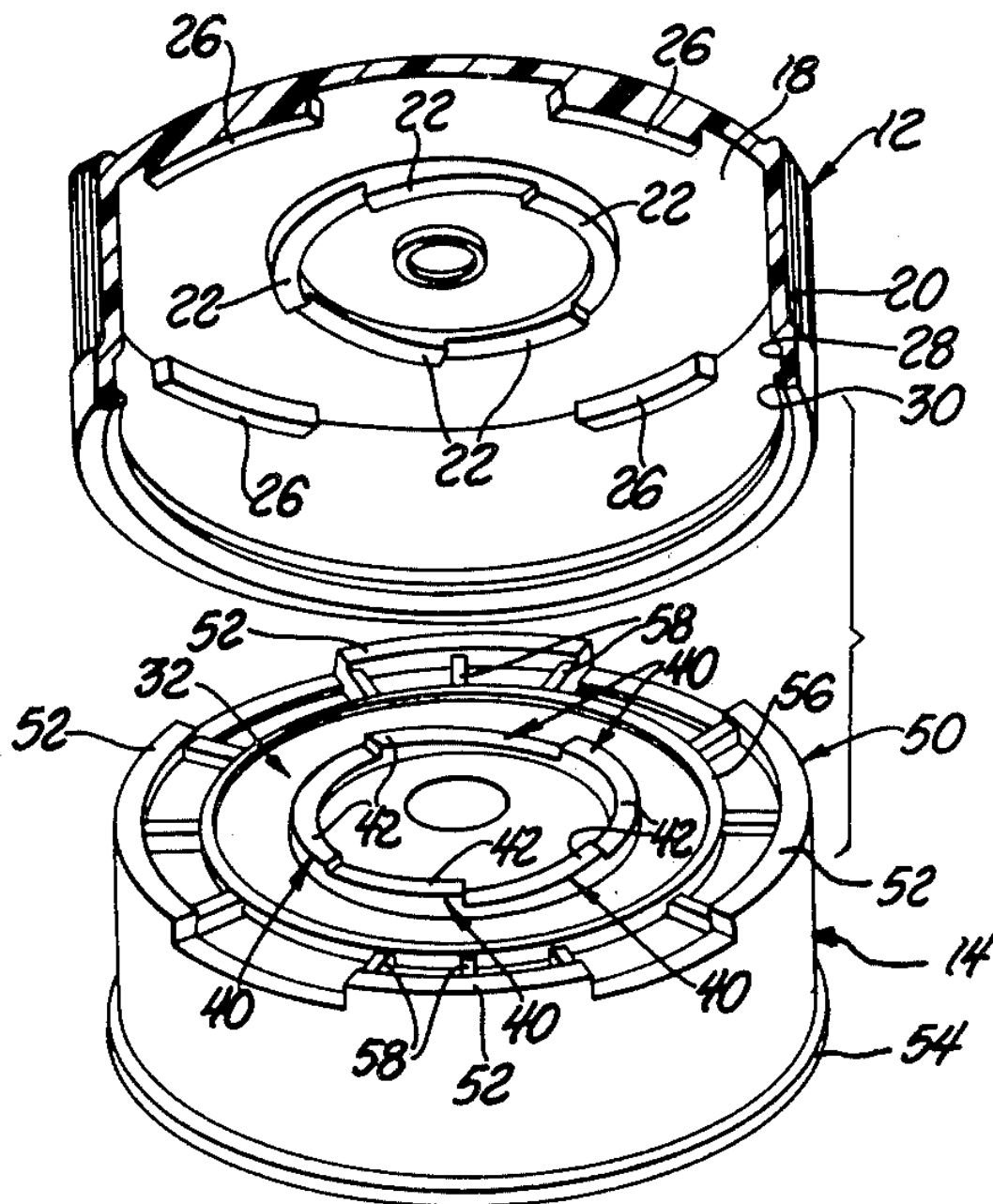
Family 81/100 - FAMPAT - ©Questel

Title

(EP--30830)

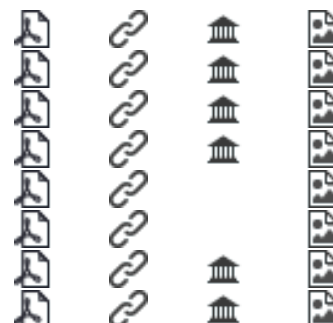
Safety closure assembly.

Images



Publication numbers with kind code & date

NZ195765	A	1984-11-09	NZ-195765
CA1143339	A	1983-03-22	CA1143339
AU6499580	A	1982-06-10	AU8064995
US4319690	A	1982-03-16	US4319690
AR224428	A1	1981-11-30	AR-224428
ZA8007591	B	1981-11-25	ZA8007591
JPS56106754	A	1981-08-25	JP56106754
EP0030830	A1	1981-06-24	EP--30830



IPC - International classification

B65D-041/04; B65D-041/04; B65D-050/04; B65D-050/04

Abstract

(EP0030830)

In a safety screw closure device an axially projecting skirt portion (20) of the outer cap (12) loosely encompasses the skirt portion (34) of the inner cap (14) to allow relative rotary movement between the caps (12,14). Integrally molded with the circular domeshaped top panel (42) of the inner cap (14) there are provided a plurality of upwardly extending ratchet lugs

(40) which are in engagement with a plurality of ratchet lugs (22) on the interior of the end wall (18) of the outer cap (12). Thus removal of the safety screw closure device is prevented unless the outer cap is pressed down to overcome the bias of the dome-shaped top panel (47) and thereby bring a plurality of drive lugs (26) extending downwardly from the interior of the end wall (18) into engagement with a plurality of upwardly extending drive members (52) integrally molded with the periphery of the top panel (47). A reduced thickness annular portion in the end wall (18) may facilitate slippage for the ratchet lugs (22,40), and stop means may be provided to prevent overstressing and deformation of the top panel (47).

Inventors

HEDGEWICK PETER

BIRRELL STEWART H

Latest standardized assignees - inventors removed

PAC TEC

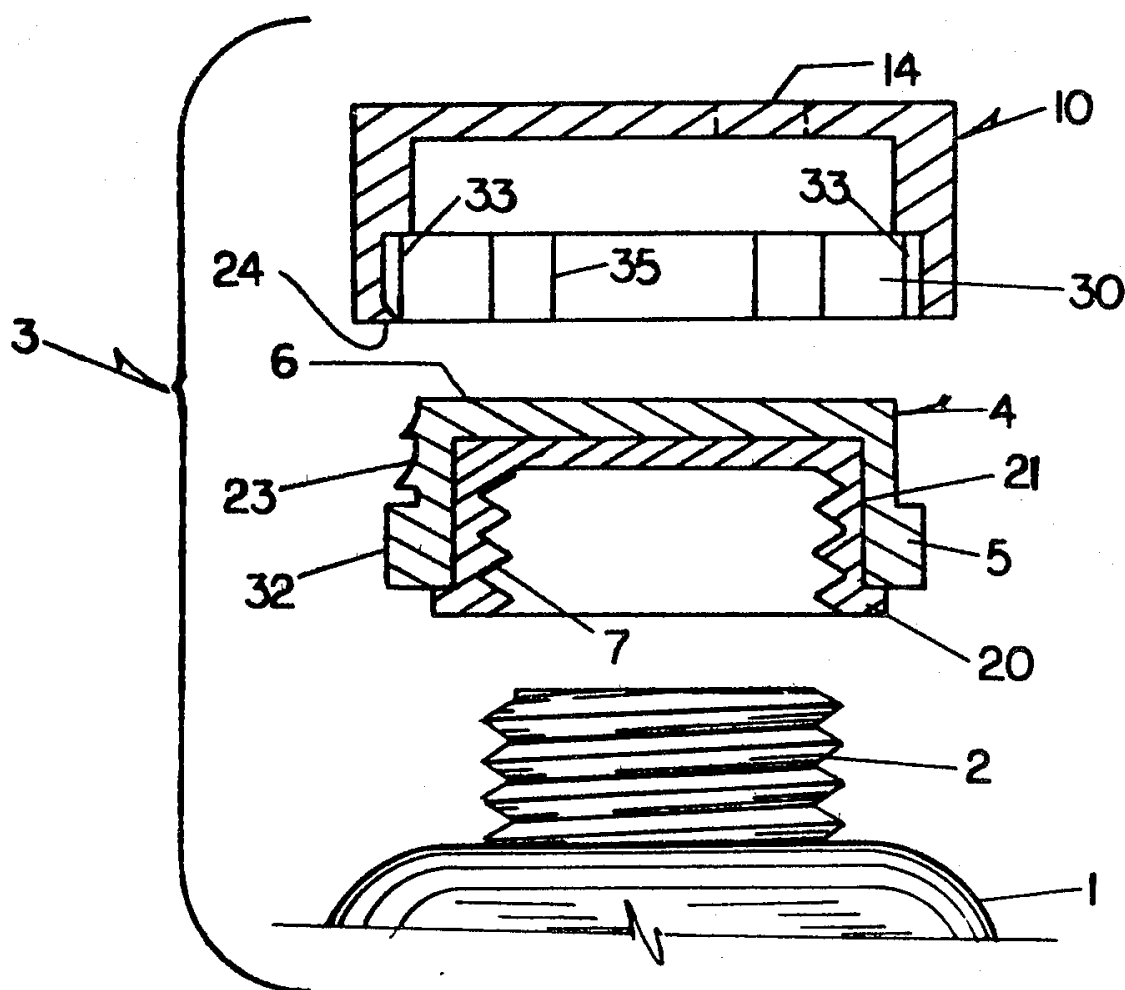
Family 82/100 - FAMPAT - ©Questel

Title

(US4440306)

Tamper-evident closure

Images



Publication numbers with kind code & date

US4440306

A 1984-04-03

US4440306



IPC - International classification

B65D-055/02; B65D-055/02

Abstract

(US4440306)

A tamper evident closure including a threaded cap for a threaded container neck and an enclosing cap mounted on the

threaded cap. The threaded cap is provided with indicia which is permanently visible through a transparent portion or aperture in the enclosing cap after the closure is removed from the container.

Inventors

VAN BUSKIRK E JAMES

ENNIS JAMES

Latest standardized assignees - inventors removed

SILVER INDUSTRIES

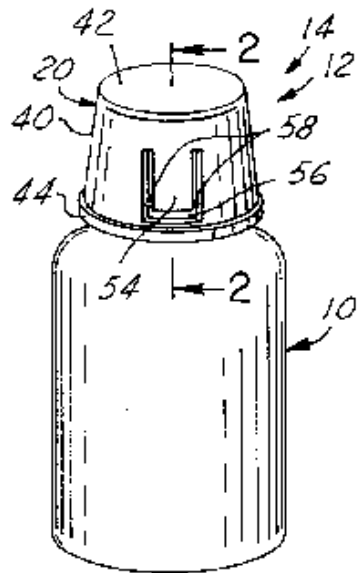
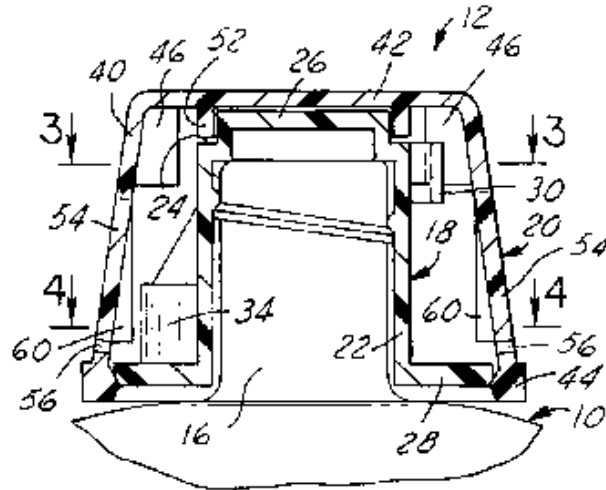
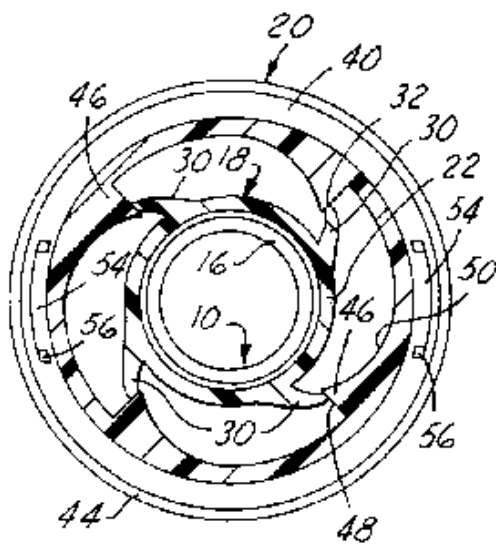
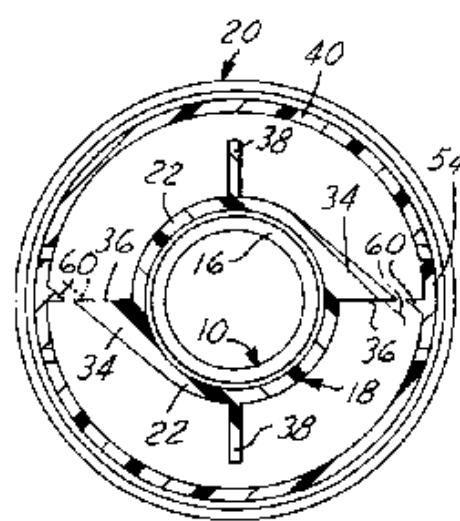
Family 83/100 - FAMPAT - ©Questel

Title

(US5918752)

Tamper-evident squeeze-and-turn child-resistant closure

Images

FIG. 1FIG. 2FIG. 3FIG. 4**Publication numbers with kind code & date**

US5918752

A 1999-07-06

US5918752

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US5918752)

A tamper-evident squeeze-and-turn child-resistant closure includes separate inner and outer caps each of integral monolithic plastic composition. The inner cap comprises a skirt with internal threads having application and removal lugs extending radially outwardly therefrom. The outer cap comprises an outer skirt having application lugs extending radially inwardly therefrom for engagement with the application lugs on the inner skirt to thread the closure onto a container. A pair of diametrically opposed tabs on the outer skirt have inwardly extending removal lugs for engagement with the removal

lugs on the inner skirt to unthread the closure from the container. The tabs are resiliently joined at one end to the skirt, and are joined to the skirt at an opposing end by frangible links that rupture upon first inward movement of the tabs to indicate possible tampering with the closure.

Inventors

MEYER TODD W

Latest standardized assignees - inventors removed

BPREX HEALTHCARE PACKAGING

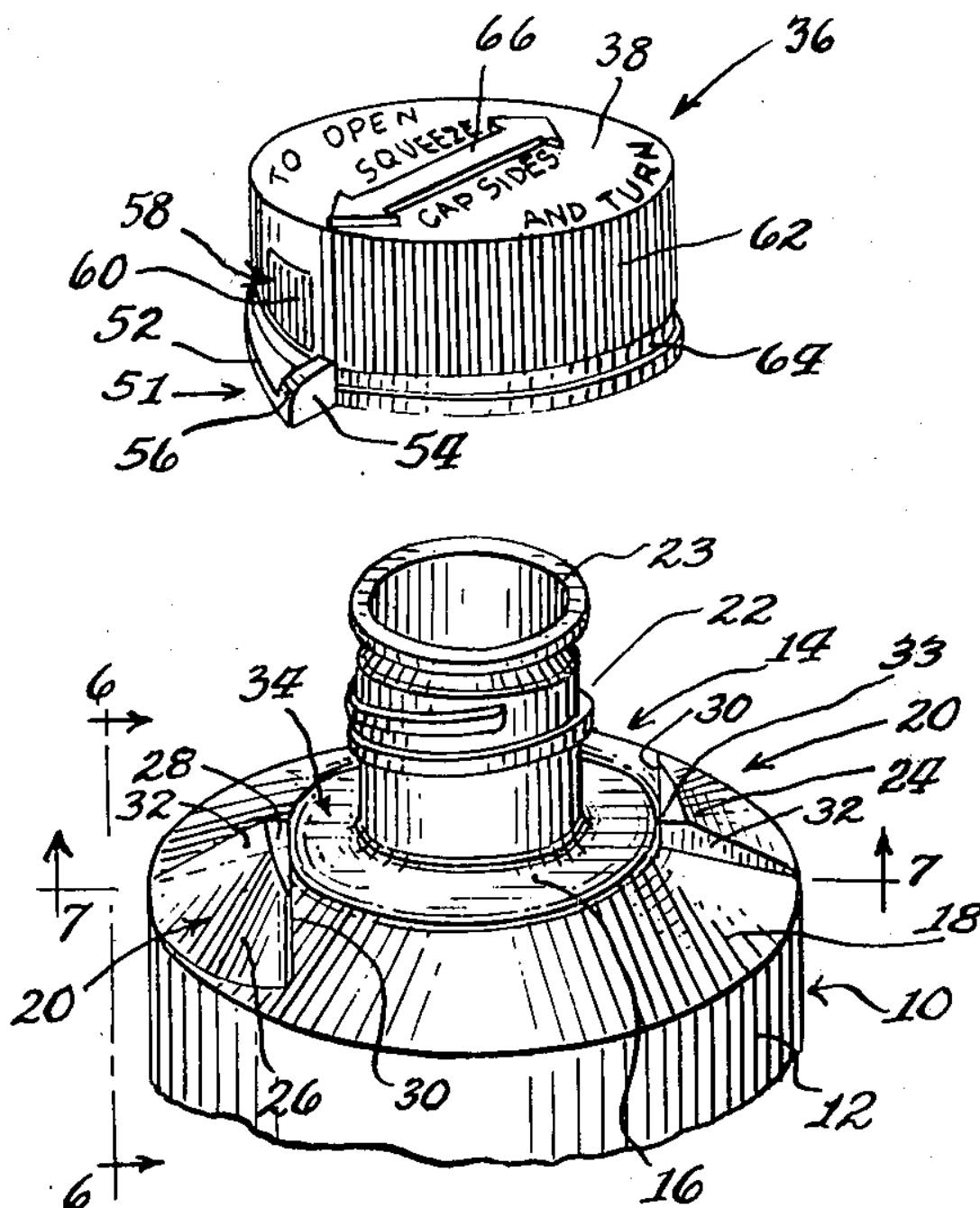
Family 84/100 - FAMPAT - ©Questel

Title

(US3993208)

Safety closure means

Images



USB541015

I5

1976-01-27

USB541015

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(USB541015)

Safety closure means comprising a container and a closure cap therefor, in which the container has a neck and a shoulder, which shoulder is formed with a pair of diametrically positioned locking lugs integrally formed therewith. The cap is formed of a thermoplastic material having a top end wall and a depending annular inner wall and a depending outer annular skirt spaced from the inner wall, with the inner wall of the cap having threaded means for engaging the neck of the container to secure the cap to the container in a closed position. The outer skirt of the cap has a pair of diametrically positioned radially extending locking lugs adjacent the lower end thereof integrally formed with said skirt, the cap locking lugs being adapted when the cap is rotated to cap closing position to pass inwardly of the container locking lugs and to be compressed radially inward during said passage, and as the cap lugs move past the container locking lugs the cap lugs will be released from their compressed state so that they extend outwardly beyond the engaging edges of the container locking lugs to lock therewith and prevent counter-rotation or unscrewing of the cap. The outer skirt of the cap is adapted to be manually engaged and pressed radially inward adjacent the cap locking lugs to permit the cap lugs to clear the engaging edges of the container lugs and ride inwardly of the inside surface of the container lugs when the cap is rotated in a counter-rotation to permit removal of the cap from the container neck.

Inventors

OSTROWSKY EFREM M

Latest standardized assignees - inventors removed

ETHYL MOLDED PRODUCTS

Family 85/100 - FAMPAT - ©Questel

Title

(EP-502379)

A closure device for bottles, particularly intended for bottles containing quality drinks

Images

Fig.1

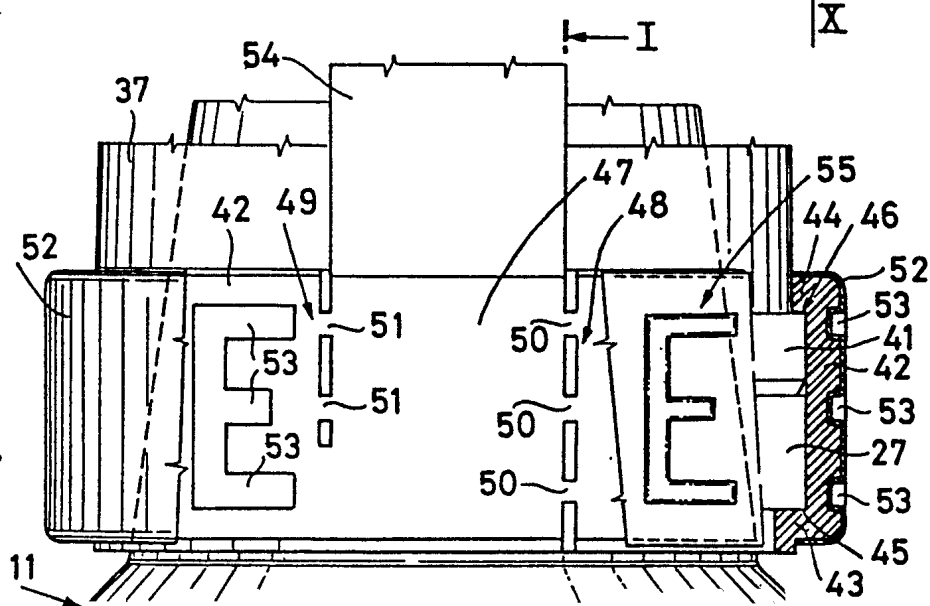
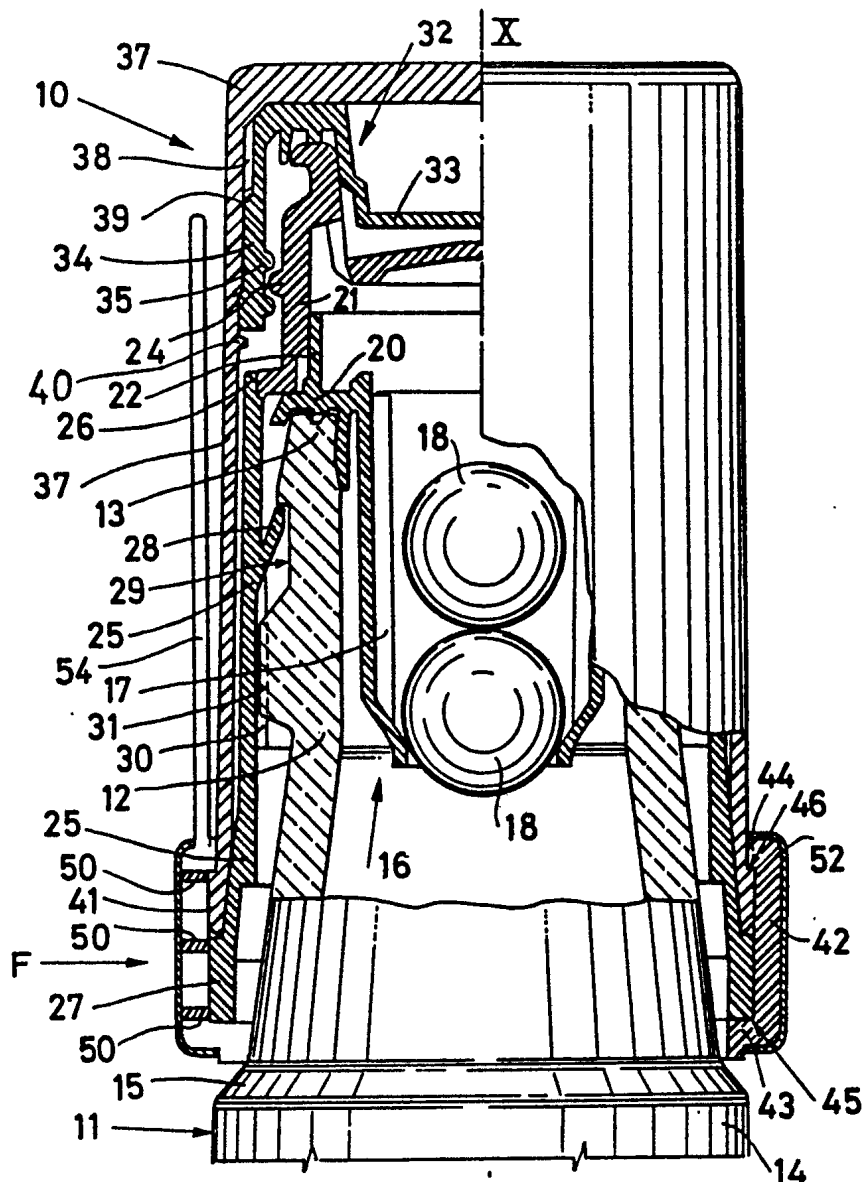


Fig.2

Publication numbers with kind code & date

KR100209991	B1	1999-07-15	KR100209991
HK1003989	A1	1998-11-13	HK1003989
ES2083604	T3	1996-04-16	ES2083604
GR3018533	T3	1996-03-31	GR3018533
DE69206844	D1	1996-02-01	DE69206844



AT131792	T	1996-01-15	ATE131792				
EP0502379	B1	1995-12-20	EP-502379				
AR248375	A1	1995-08-18	AR-248375				
IT1247132	B	1994-12-12	IT1247132				
US5246124	A	1993-09-21	US5246124				
EP0502379	A3	1993-08-18	EP-502379				
BR9200745	A	1992-11-10	BR9200745				
KR920017938	A	1992-10-21	KR19920017938				
EP0502379	A2	1992-09-09	EP-502379				
ITMI910565	A1	1992-09-06	IT91MI0565				
MX9200906	A	1992-09-01	MX9200906				
ITMI910565	D0	1991-03-05	IT91MI0565				

IPC - International classification

B65D-049/06; B65D-055/08

Abstract

(EP0502379)

In a closure device for bottles, particularly intended for bottles containing quality drinks, there are provided a pour body (21) adapted to be secured on the neck (12) of the bottle (11) and a cap (32) which engages releasably with the pour body (21); the cap (32) is rigid with a tubular outer skirt (37) which abuts against an annular outer portion (27) of a collar (25) fast with the pour body (21); the skirt (37) and the annular outer portion (27) are bonded by a frangible outer ring (42) which provides a seal hard to rebuild at a low cost. <IMAGE>

Inventors

BATTEGAZZORE PIERO

Latest standardized assignees - inventors removed

GUALA CLOSURES

Family 86/100 - FAMPAT - ©Questel

Title

(US3679085)

Child-proof cap for medicine bottles

Images

The closure and driver have co-operating one-way driving means for screwing the closure onto the bottle which are engaged by pushing the driver down, and second co-operating driving means for unscrewing the closure which are engaged by pulling the driver upwardly and squeezing its walls inwardly.

Inventors

GACH PETER P

Latest standardized assignees - inventors removed

SUNBEAM PLASTICS

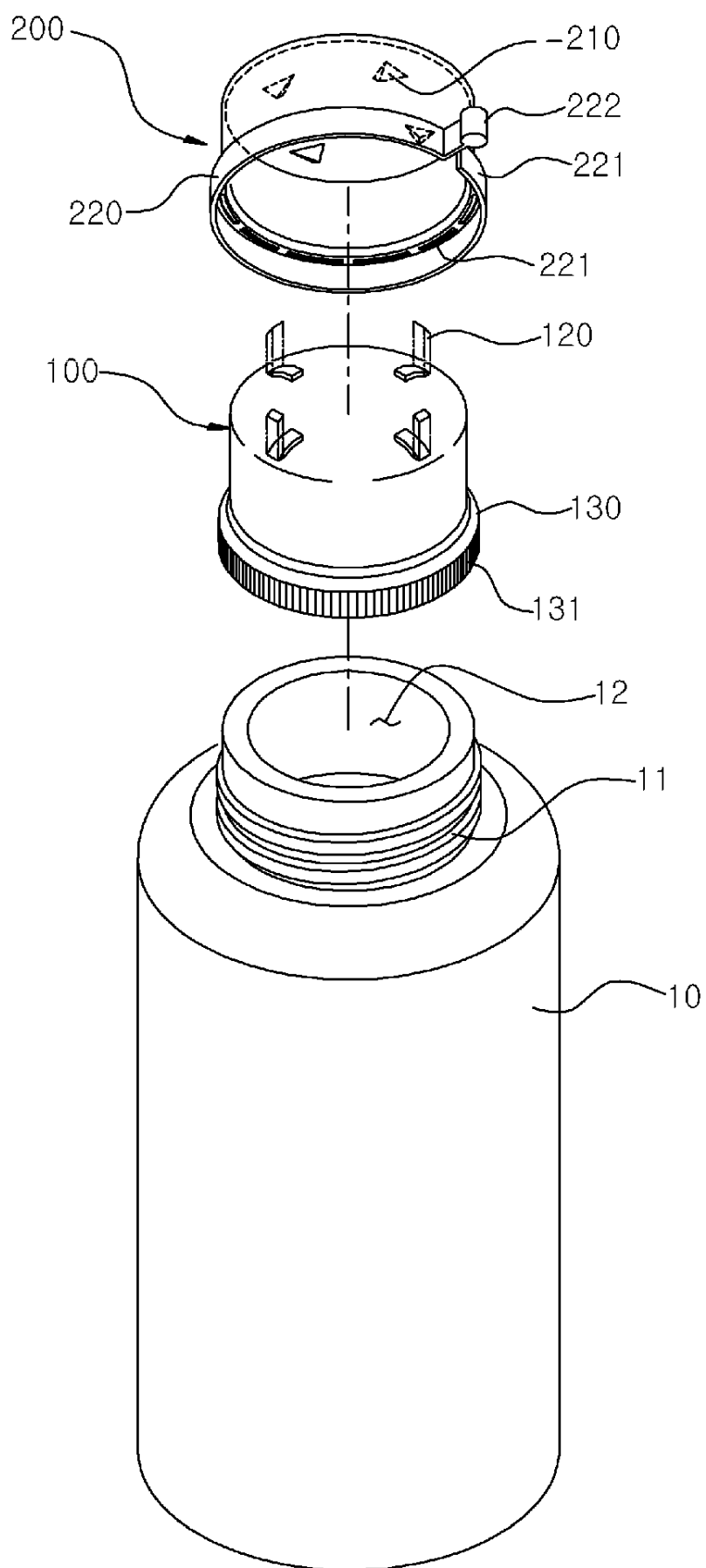
Family 87/100 - FAMPAT - ©Questel

Title

(EP2639181)

Safety cap

Images



Publication numbers with kind code & date

JP2013545681	A	2013-12-26	JP2013545681				
EP2639181	A2	2013-09-18	EP2639181				
US20130221007	A1	2013-08-29	US20130221007				
CN103209902	A	2013-07-17	CN103209902				
KR101210435	B1	2012-12-10	KR101210435				
WO2012/064157	A3	2012-07-19	WO201264157				
KR20120050813	A	2012-05-21	KR20120050813				
WO2012/064157	A2	2012-05-18	WO201264157				

IPC - International classification

B65D-041/04; B65D-041/04; B65D-041/34; B65D-041/34; B65D-049/12; B65D-050/04; B65D-050/04; B65D-051/18

Abstract

(EP2639181)

The present invention relates to a safety cap which is screwed onto an upper portion of a container body in which contents are stored so as to open/close the outlet of a container. The safety cap of the present invention is configured such that, when an outer cap rotates in a closing direction, a stopper protrusion of the outer cap is brought into contact with a protrusion of an inner cap and the outer cap and the inner cap rotate together, thus enabling the container to be easily closed and automatically capped during a manufacturing process.

Inventors

JUNG SEO-HUI

HWANG MIN-WOOK

Latest standardized assignees - inventors removed

YONWOO

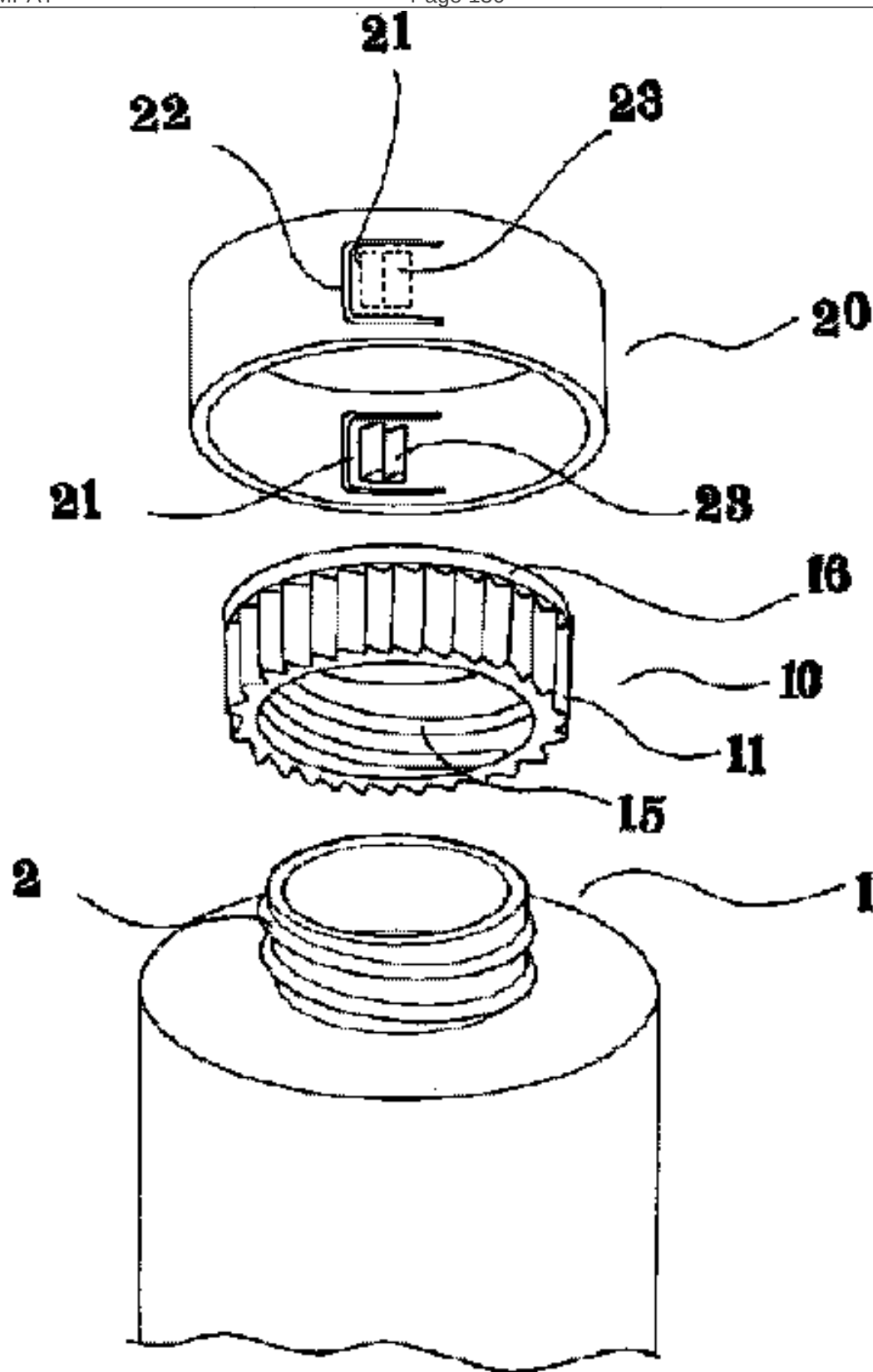
Family 88/100 - FAMPAT - ©Questel

Title

(JP2003104408)

Childproof cap

Images

**Publication numbers with kind code & date**[JP2003104408](#)

A

2003-04-09

JP2003104408

**IPC - International classification**

B65D-041/04; B65D-041/04

Abstract

(JP2003104408)

PROBLEM TO BE SOLVED: To solve a problem that although a childproof cap including a float spring provided between an inner cap to be screwed with a container and an outer cap, which is rotated to open by pressing the outer cap to the inner cap against spring force has been advantageously used, it cannot fully serve as the childproof cap since how to open it is widely known. **SOLUTION:** The childproof cap comprises an inner cap 10 to be screwed with a container neck 1, and

an outer cap 20. The inner cap has a series of non-return teeth 11 provided along its outer periphery, while the outer cap has an operate-to-open elastic portion 21 having ratchets 23 provided. The childproof cap is so designed that if the outer cap is rotated in the direction of closing, the ratchets 23 and the non-return teeth 11 engage to have the cap closed, if the outer cap is rotated in the direction of opening as it is, it fails to engage, and it is not opened until the operate-to-open elastic portion 21 is pushed to cause the ratchets 23 to engage with the non-return teeth 11 for rotation.

Inventors

HIROTA HIDETOSHI

IKEDA KAZUHIRO

Latest standardized assignees - inventors removed

SHIROUMA SCIENCE

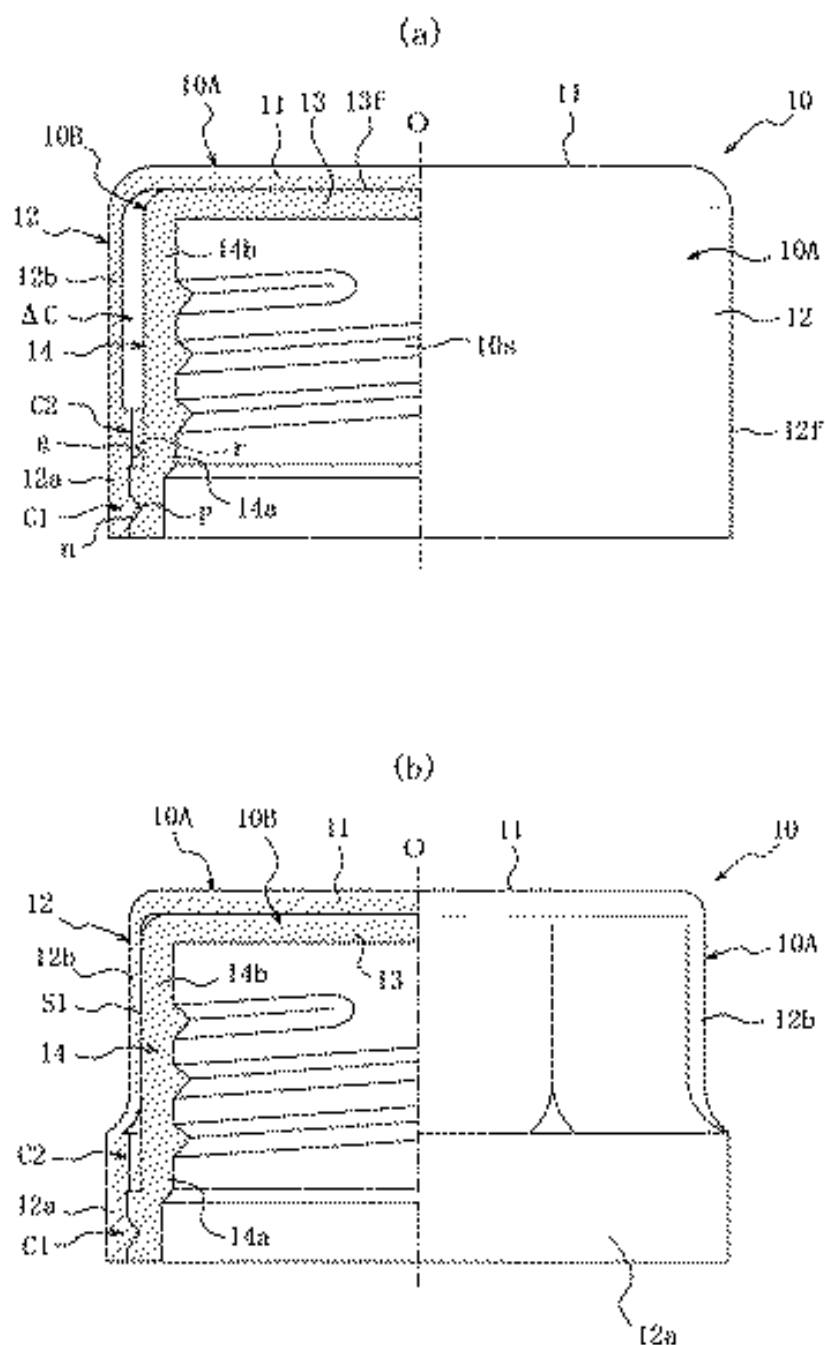
Family 89/100 - FAMPAT - ©Questel

Title

(JP2014009012)

Screw cap

Images



Publication numbers with kind code & date

JP6033589	B2	2016-11-04	JP6033589
JP2014009012	A	2014-01-20	JP2014009012



IPC - International classification

B65D-041/04; B65D-041/04; B65D-051/18

Abstract

(JP2014009012)

PROBLEM TO BE SOLVED: To provide a new screw cap allowing selection of various appearance shapes of the cap while

securing grip force to the screw cap.

SOLUTION: A screw cap includes an outer cylindrical body 10A which includes a peripheral wall 12 suspended down from an outer edge of a top wall 11 and has a space formed inside the peripheral wall 12, and an inner cylindrical body 10B which is disposed inside the outer cylindrical body 10A and includes a peripheral wall 14b which is removably screw-fastened to a cylindrical mouth portion of a container. The peripheral wall 12b of the outer cylindrical body 10A is formed of a deformable and restorable material, and a peripheral wall lower end 12a of the outer cylindrical body 10A and a peripheral wall lower end 14a of the inner cylindrical body 10B include fixing portions C1 and C2, respectively, so as to fix to each other. An annular gap ΔC revolving around an axis O is formed between the peripheral wall 14b of the inner cylindrical body 10B and the peripheral wall 12b of the outer cylindrical body 10A other than the fixing portions C1 and C2. An outer peripheral surface of the peripheral wall 14b of the inner cylindrical body 10B forming the gap ΔC is configured as a slip prevention portion which locally contacts by crushing the peripheral wall 12b of the outer cylindrical body 10A and is hooked in the peripheral direction with the screwdriver.

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Inventors

OTA ATSUSHI

Latest standardized assignees - inventors removed

YOSHINO KOGYOSHO

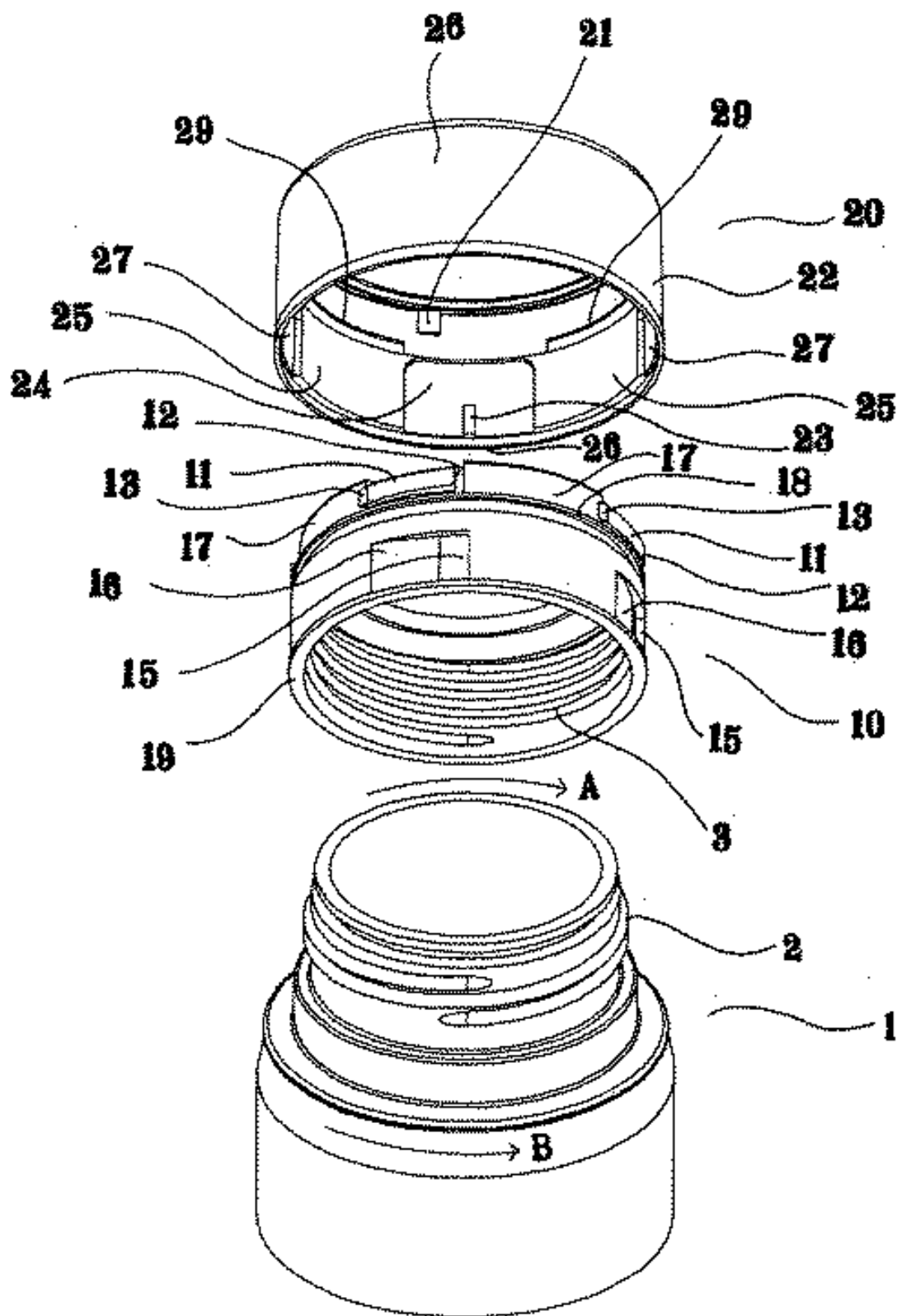
Family 90/100 - FAMPAT - ©Questel

Title

(JP2006103715)

Safety cap device

Images



Publication numbers with kind code & date

JP2006103715

A

2006-04-20

JP2006103715



IPC - International classification

B65D-041/04; B65D-041/04

Abstract

(JP2006103715)

PROBLEM TO BE SOLVED: To provide a safety cap device capable of reliably closing a cap by providing an irrotation prevention mechanism which runs idle without locking when turned in a cap-opening direction.

SOLUTION: The safety cap device has an irrotation prevention mechanism which closes an inner cap when an outer cap is

turned in the cap closing direction A and runs idle when the outer cap is turned in the cap opening direction B between an inner cap 10 which is screwed to a container neck portion 1 and closed, and the outer cap 20 to turnably cover the outer circumference of the inner cap. A locking projection part 23 which is projected inwardly when pressed is provided on a skirt part 22 of the outer cap 20, and an engagement part 15 to be engaged with the locking projection part is provided on the outer circumference of the inner cap 10.

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Inventors

IKEDA KAZUHIRO

Latest standardized assignees - inventors removed

SHIROUMA SCIENCE

NISSEI SANGYO

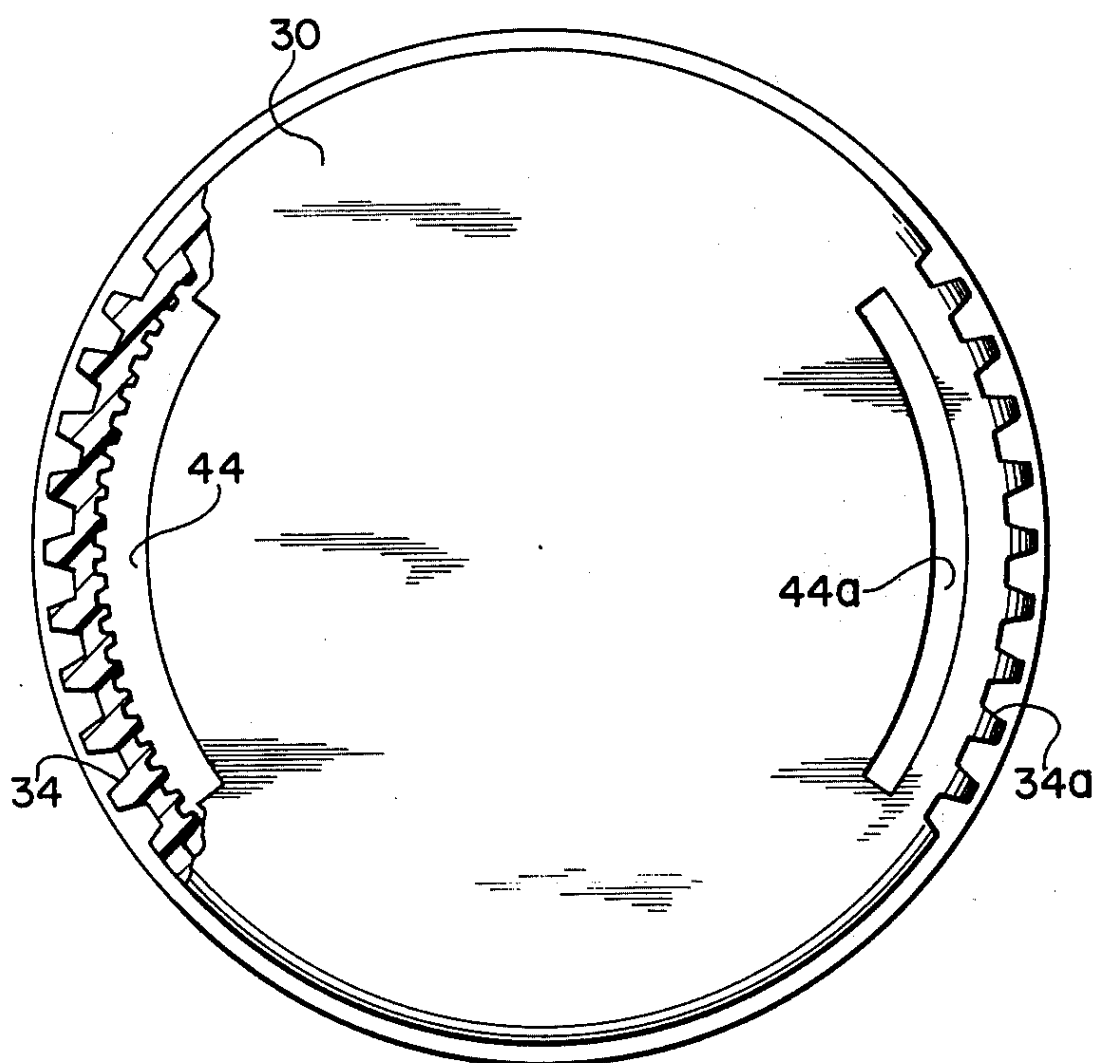
Family 91/100 - FAMPAT - ©Questel

Title

(US3934744)

Closure assembly

Images



Publication numbers with kind code & date

[US3934744](#)

A

1976-01-27

US3934744



IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US3934744)

An outer cap for association with a conventional externally knurled screw closure cap and serving as a safety overcap converting the same to a double cap safety closure for sealing threaded bottles and other containers with contents which might be harmful to children; with the outer cap constructed for trapped association with the inner cap for permissive free rotation relative thereto but provided with internal knurling and an adjacent relieved or slotted area permitting inward flexing of the adjacent knurled wall of the overcap into engagement with the external knurling of the inner cap upon selected pressure applied by an adult to effect rotation of both caps in unison, such as the unscrewing direction, for authorized access to the contents of the container.

Inventors

CURRY JOHN JOSEPH

Latest standardized assignees - inventors removed

ITW - ILLINOIS TOOL WORKS

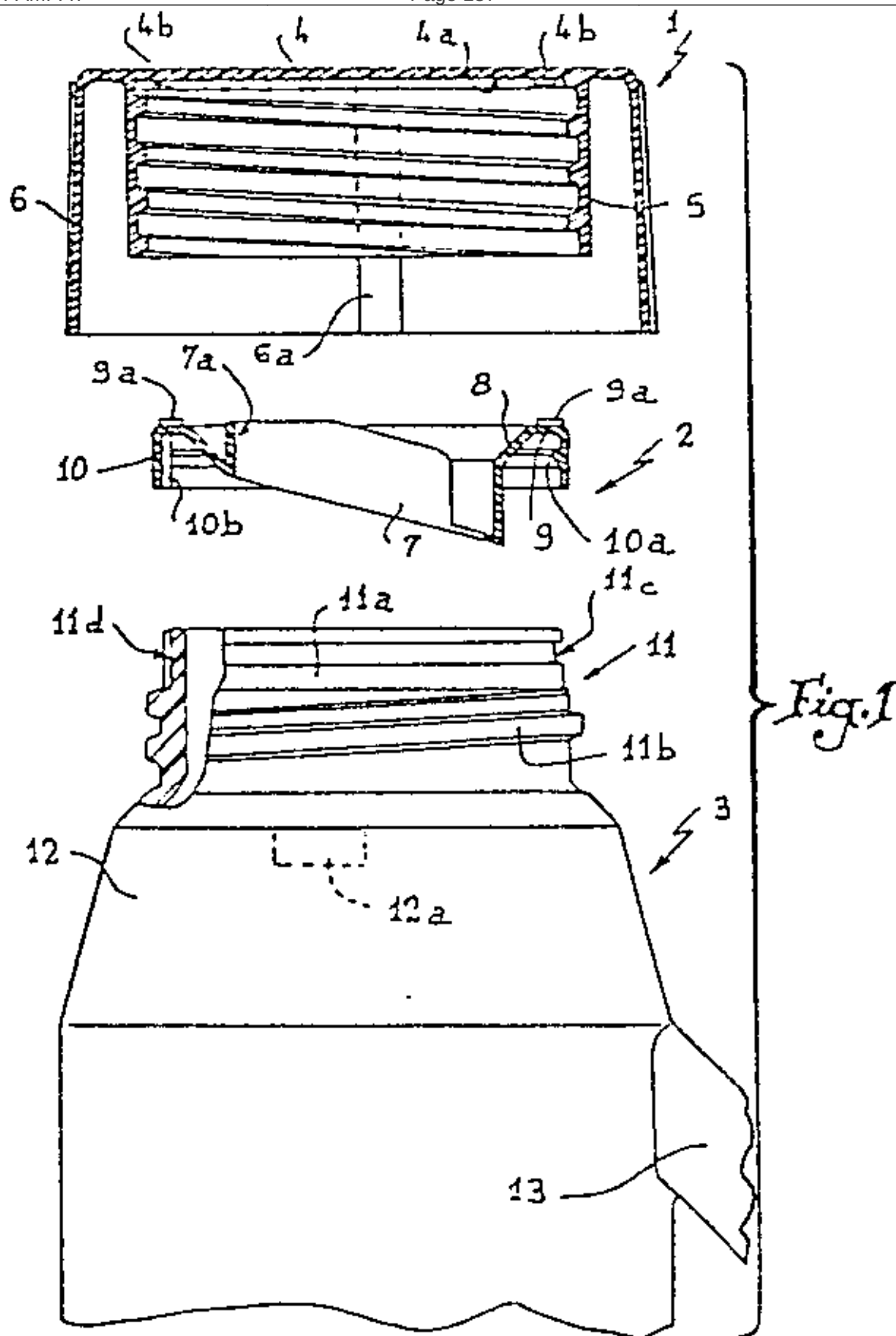
Family 92/100 - FAMPAT - ©Questel

Title

(EP-299886)

Arrangement between a screw closure with internal pouring spout and a container

Images



Publication numbers with kind code & date

ES2022691	B3	1991-12-01	ES2022691
DE3863021	D1	1991-07-04	DE3863021
EP0299886	B1	1991-05-29	EP-299886
FR2617465	B1	1989-10-27	FR2617465
EP0299886	A1	1989-01-18	EP-299886
FR2617465	A1	1989-01-06	FR2617465



IPC - International classification

B65D-047/06; B65D-050/04

Abstract

(EP0299886)

The inner face (4a) of the bottom (4) of the closure (1) comprises at least one tooth (4d). The top of the annular crown (9) of the pourer (2), which is applied against the bottom (4) of the closure (1), is provided with at least one notch (9a). The inner wall of the skirt (10) of the pourer (2), which is intended to surround the neck, comprises a projection (10b). The end (11a) of the neck comprises an axial groove (11d) in which the projection (10b) of the pourer (2) engages when the closure (1) is screwed onto the neck (11) and the tooth (4b) of this closure (1) comes up against the notch (9a) of the pourer (2) in order to drive it in rotation. The angular retention exerted on the pourer (2) by the projection (10b)/groove (11d) assembly is greater than that produced by the support (4b)/notch (9a), so that, once the projection is arranged in the groove, the pourer (2) remains angularly fixed. <IMAGE>

Inventors

SALMON, PIERRE

RACINE, JEAN-PIERRE

Latest standardized assignees - inventors removed

SOCIETE NOUVELLE DE BOUCHONS PLASTIQUES S N B P

Family 93/100 - FAMPAT - ©Questel

Title

(JP63152555)

Safety cover

Publication numbers with kind code & date

JP1877319	C	1994-10-07	JP1877319
JP6000548	B2	1994-01-05	JP94000548
JPS63152555	A	1988-06-25	JP63152555

**IPC - International classification**

B65D-041/04; B65D-041/04

Inventors

OMI HIDEHIKO

IGARASHI TOMOYA

Latest standardized assignees - inventors removed

CROWN CORK JAPAN

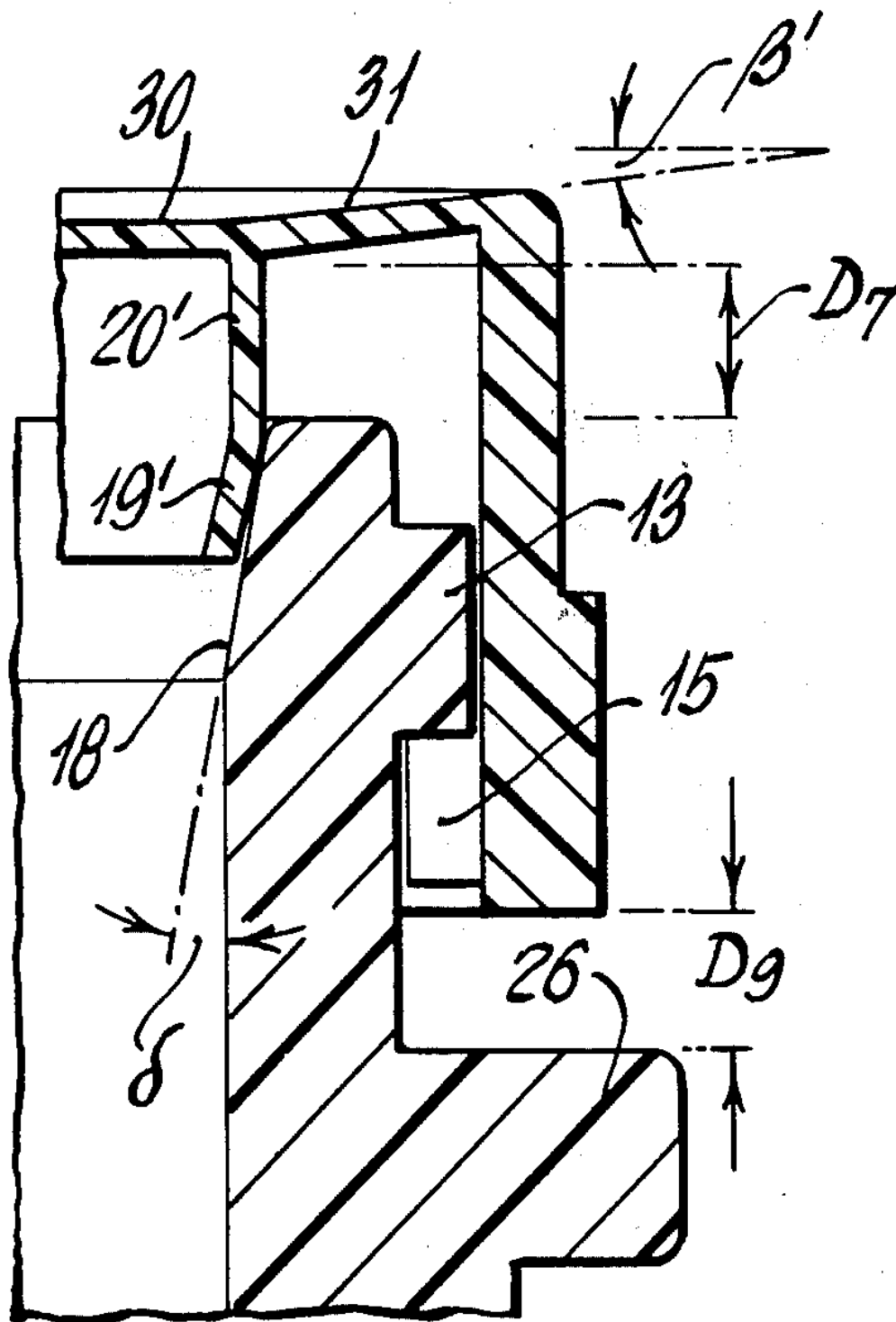
Family 94/100 - FAMPAT - ©Questel

Title

(US3951289)

Safety-closure device

Images



Publication numbers with kind code & date

US3951289	A	1976-04-20	US3951289
GB1365357	A	1974-09-04	GB1365357
CA953247	A	1974-08-20	CA-953247
BR7201304	D0	1973-07-10	BR7201304
FR2130090	A	1972-11-03	FR2130090
FR2130090	A1	1972-11-03	FR2130090
DE2156654	A1	1972-09-28	DE2156654



IPC - International classification

B65D-041/06; B65D-041/06; B65D-055/02; B65D-055/02

Abstract

(US3951289)

The invention contemplates selectively openable closure means that is tamper-proof, in the sense that a correct sequence of two deliberate and independent movements of two parts is necessary in order to achieve access to the contents of the bottle or the like which is protected by the closure.

Inventors

LANDEN WILLIAM JAMES

Latest standardized assignees - inventors removed

EYELET SPECIALTY

Family 95/100 - FAMPAT - ©Questel

Title

(US3682343)

Safety closure device

Images

US3682343	A	1972-08-08	US3682343
DE2115720	A1	1972-01-27	DE2115720

**IPC - International classification**

B65D-050/04; B65D-050/04

Abstract

(US3682343)

The invention contemplates selectively openable closure means that is tamper-proof, in the sense that a correct sequence of two deliberate and independent movements of lockable closure elements is necessary in order to achieve access to the contents of the bottle or the like which is protected by the closure.

Inventors

LANDEN WILLIAM JAMES

Latest standardized assignees - inventors removed

EYELET SPECIALTY

Family 96/100 - FAMPAT - ©Questel

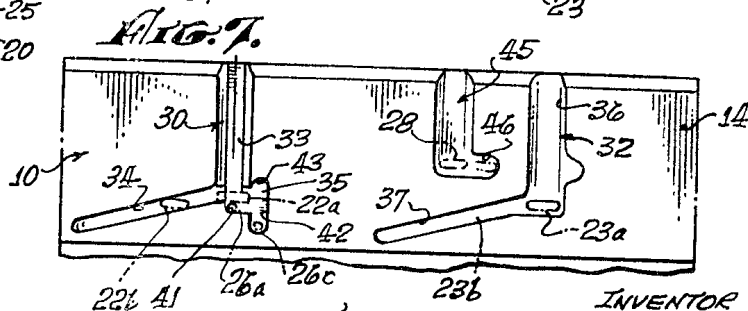
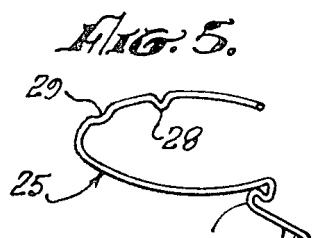
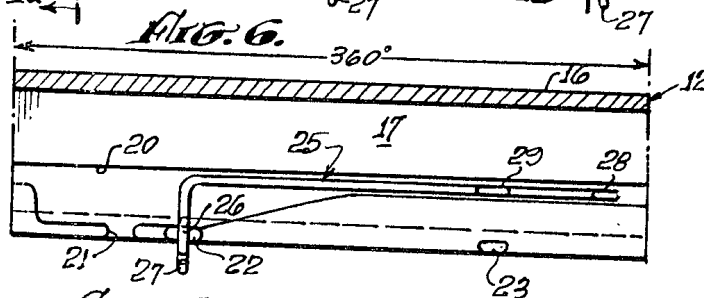
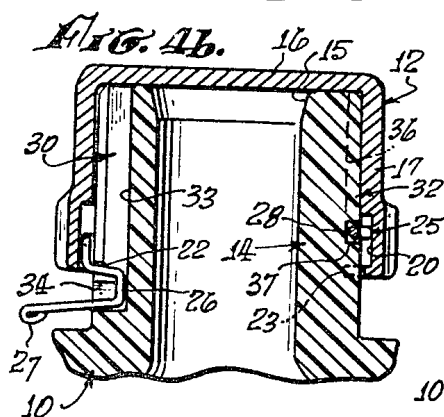
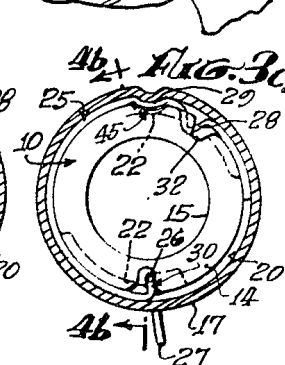
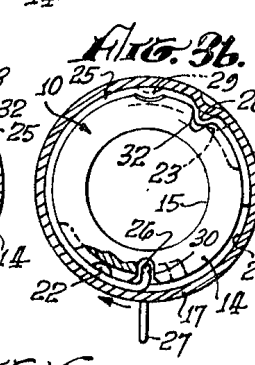
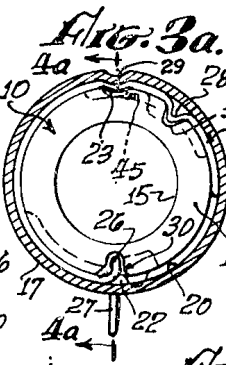
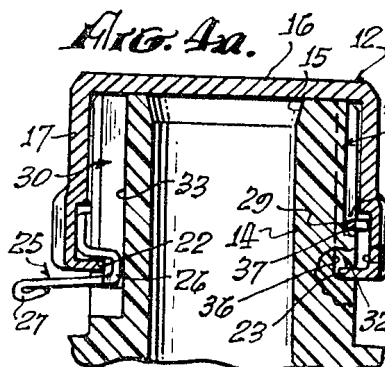
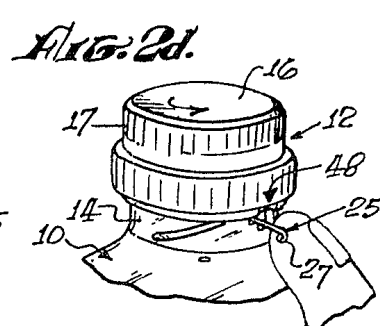
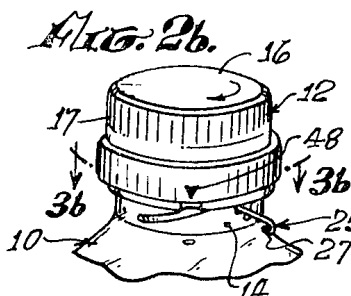
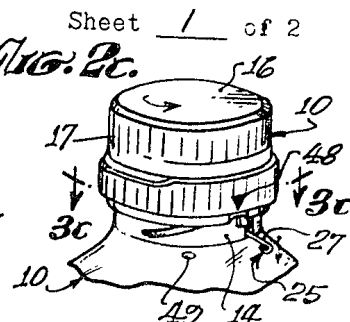
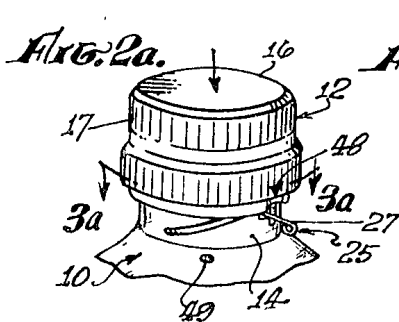
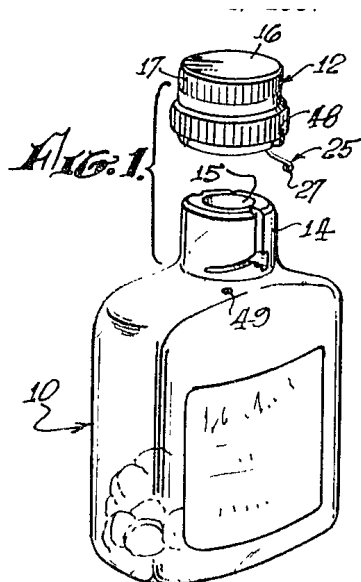
Title

(US3447709)

Locking cap for bottles and the like

Images

Sheet 1 of 2

INVENTOR
VINCENT MARASCO,By *Knigh & Rodgers*

Publication numbers with kind code & date

US3447709

A

1969-06-03

US3447709



IPC - International classification

B65D-050/06; B65D-050/06

Inventors

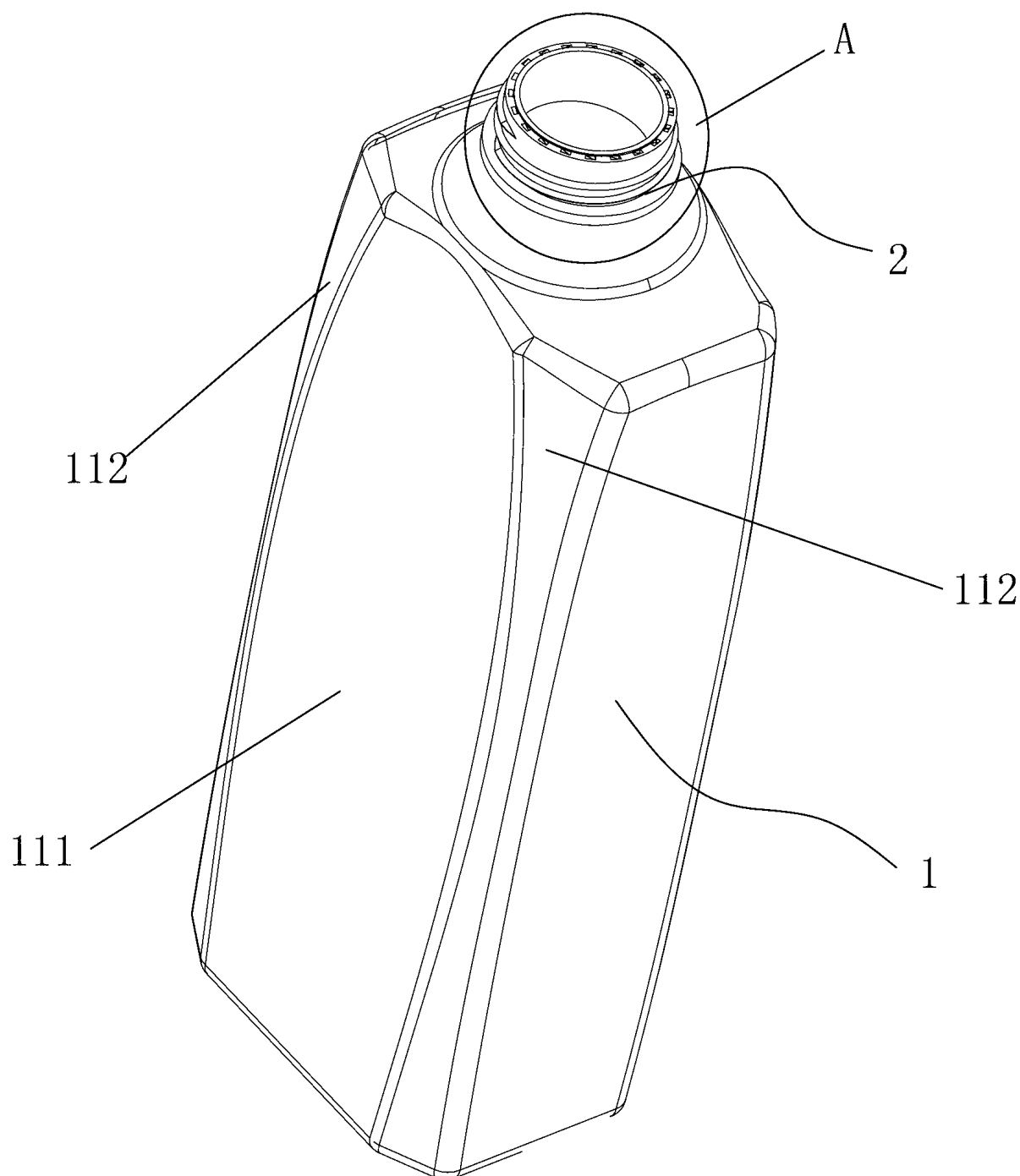
MARASCO VINCENT

Family 97/100 - FAMPAT - ©Questel

Title

(CN102951358)

Check button placement type bottle

Images**Publication numbers with kind code & date**[CN102951358](#)

A

2013-03-06

CN102951358

**IPC - International classification**

B65D-055/02; B65D-055/02

Abstract

(CN102951358)

The invention discloses a check button placement type bottle. The check button placement type bottle is characterized by comprising a bottle body, wherein a plurality of unidirectional teeth which are matched with anti-theft teeth on the bottom of a bottle cap to realize an anti-theft function are arranged on the end part of the bottle mouth of the bottle body. The check button placement type bottle is characterized in that the unidirectional teeth comprise a rectangular groove formed in the end part of the bottle mouth, wherein a slide-in inclined surface is arranged on the end, along the peripheral direction of the

bottle mouth, of the rectangular groove. The invention aims to overcome the defects of the prior art and provides the check button placement type bottle which is simple in structure, convenient to assemble and relatively low in production cost.

Inventors

CHEN YUANTING

Latest standardized assignees - inventors removed

SINO ASIA PLASTIC PACKAGE

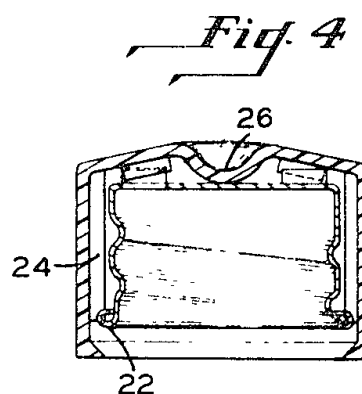
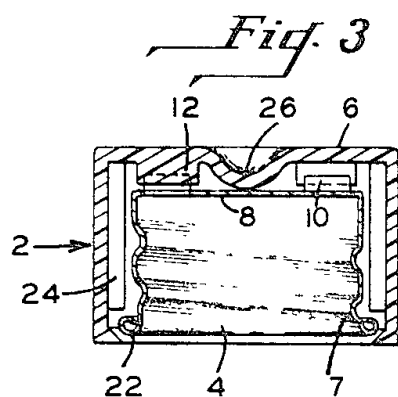
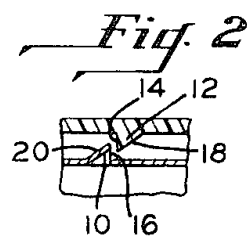
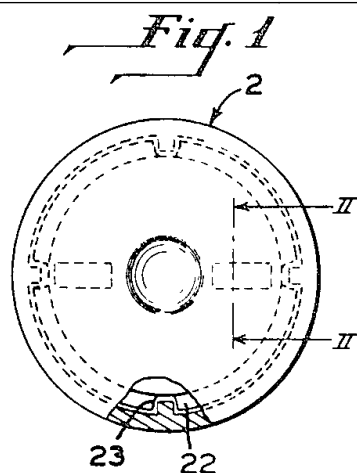
Family 98/100 - FAMPAT - ©Questel

Title

(US3638819)

Child-safe closure

Images



INVENTOR
GERALD L. RO

BY *Clifford B. Pine*

Publication numbers with kind code & date

US3638819

A

1972-02-01

US3638819



IPC - International classification

B65D-050/04; B65D-050/04

Abstract

(US3638819)

The closure is made to require a certain manipulation to remove the closure from a container and, hopefully, this manipulation is beyond the skill of a child. The closure comprises an inner metal cap and an outer plastic cap. A one-way engagement means between the metal cap and plastic cap permits the closure to be placed upon the bottle, but prevents

removal of the closure from the container. An interlock structure requiring the downward movement of the plastic cap relative to the metal cap for engagement is used for removal of the closure from the container. The resiliency of the dome of the plastic cap keeps the interlock structure normally out of engagement.

Inventors

ROY GERALD L

Latest standardized assignees - inventors removed

KERR GLASS MANUFACTURING

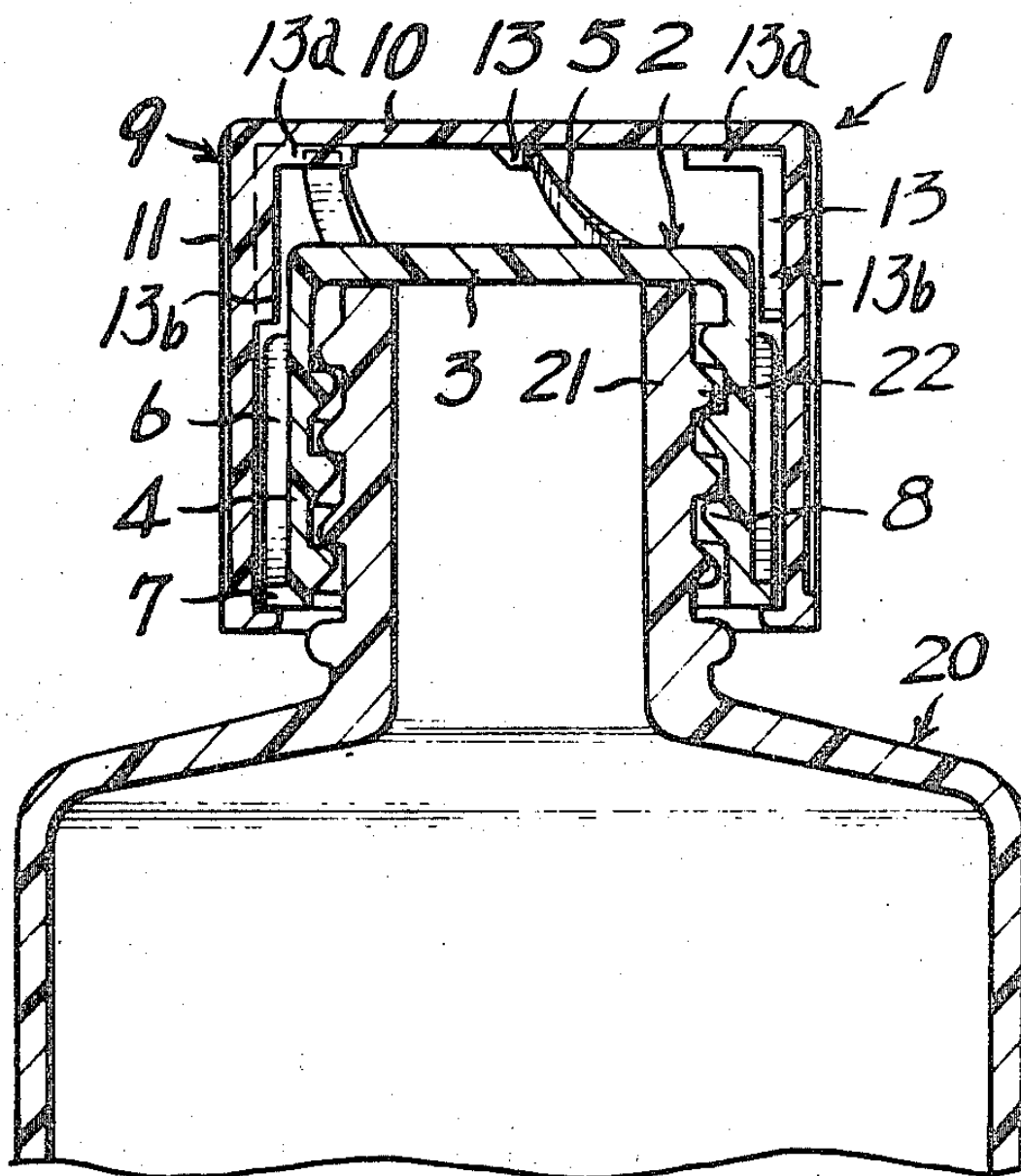
Family 99/100 - FAMPAT - ©Questel

Title

(US3795337)

Safety cap

Images

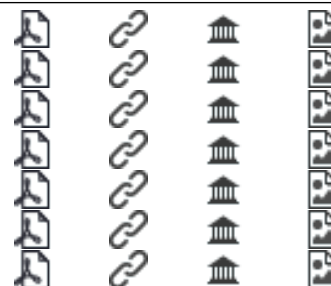


Publication numbers with kind code & date

DE7226163	U	1977-06-23	DE7226163
JPS5226060	Y2	1977-06-14	JP52026060Y
DE2234532	B2	1976-07-08	DE2234532
GB1397003	A	1975-06-11	GB1397003



FR2145684	B1	1974-12-27	FR2145684
CH553102	A	1974-08-30	CH-553102
US3795337	A	1974-03-05	US3795337
JPS4857447	U	1973-07-21	JP48057447U
FR2145684	A	1973-02-23	FR2145684
FR2145684	A1	1973-02-23	FR2145684
DE2234532	A1	1973-02-15	DE2234532

**IPC - International classification**

B65D-041/04; B65D-041/04; B65D-050/04; B65D-050/04; B65D-051/18

Abstract

(US3795337)

A safety cap according to the present invention comprises an outer cap of a synthetic resin and an inner cap vertically movably and rotatably inserted into said outer cap. Between said inner and outer caps there are provided resilient engaging pieces, projections and engaging projecting members, by action of which usually the inner cap can be turned by turning only the outer cap in a tightening direction while the inner cap can not be turned, relative to the untightening direction, unless the outer cap is turned in such a state that the outer cap is pushed down, that is, the outer cap running idle.

Inventors

NOZAWA T

TASAKI T

NISHIIUE K

Latest standardized assignees - inventors removed

YOSHINO KOGYOSHO

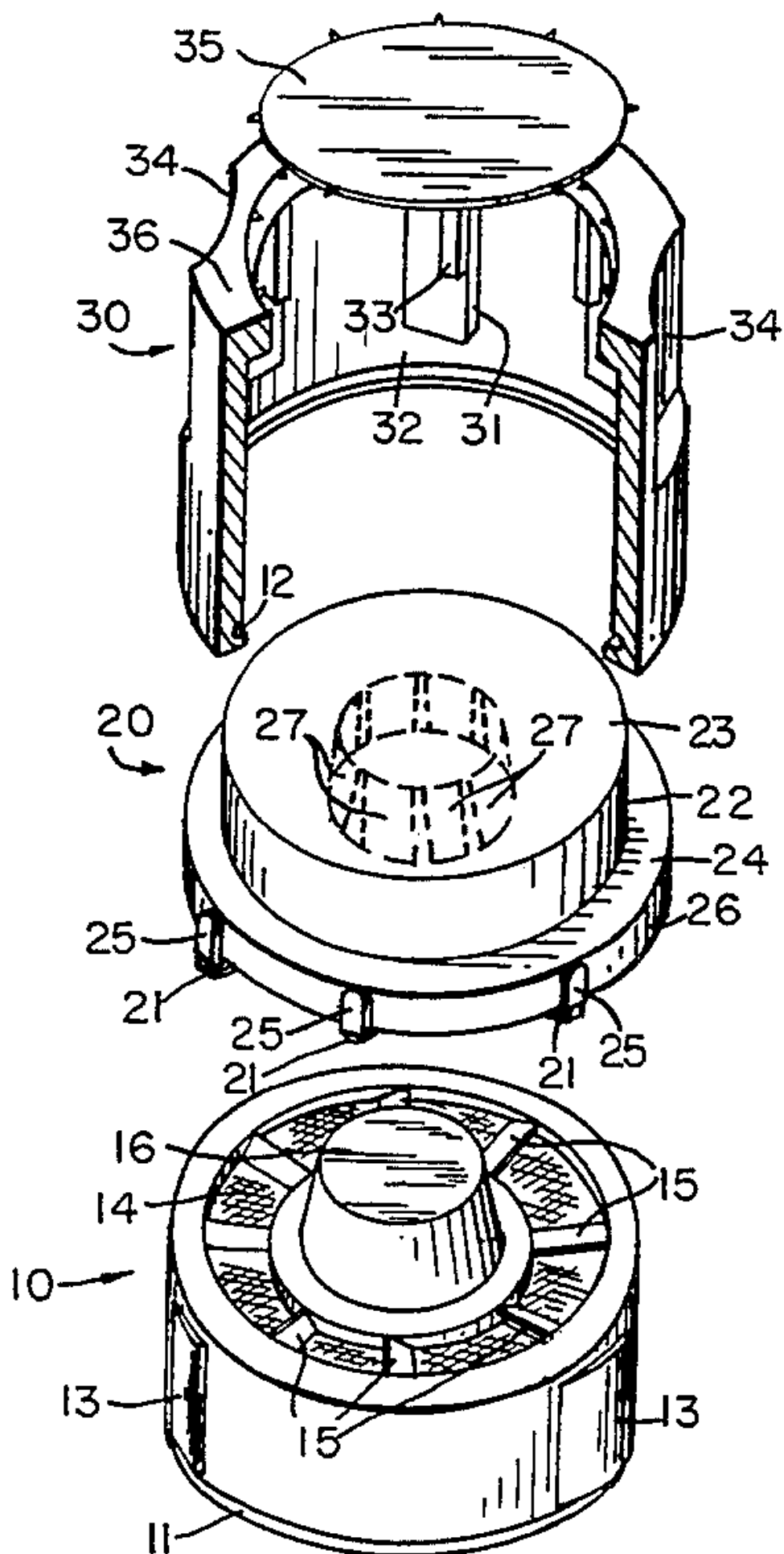
Family 100/100 - FAMPAT - ©Questel

Title

(EP-586417)

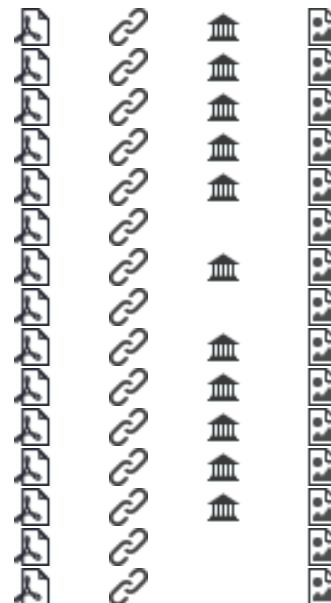
Plastic safety cap.

Images



Publication numbers with kind code & date

JPH0832534	B2	1996-03-29	JP96032534
DE69201191	T2	1995-08-17	DE69201191
ES2070638	T3	1995-06-01	ES2070638
DE69201191	D1	1995-02-23	DE69201191
US5381917	A	1995-01-17	US5381917
AT116929	T	1995-01-15	ATE116929
EP0586417	B1	1995-01-11	EP-586417
IT1247088	B	1994-12-12	IT1247088
JPH06502610	A	1994-03-24	JP06502610
EP0586417	A1	1994-03-16	EP-586417
WO92/21584	A3	1993-01-07	WO9221584
WO92/21584	A2	1992-12-10	WO9221584
CA2106475	A1	1992-11-30	CA2106475
ITV910093	A1	1992-11-30	IT91VI0093
ITV910093	D0	1991-05-29	IT91VI0093

**IPC - International classification**

B65D-050/04; B65D-055/02; B65D-055/02

Abstract

(EP0586417)

The invention discloses a cap with a safety opening which comprises an inner element (10) with a thread suited to be screwed on the neck of a bottle (40), presenting on its outer cylindrical surface cogs (13) matching the corresponding cogs (31) which are present on an outer element (30), an outer element (30), also essentially cylindrical, presenting a double row of cogs (31, 33), co-operating with the inner element (10) and with a push-button (20); a push-button (20) having an essentially cylindrical shape and being placed between the inner and the outer elements and presenting at its bottom an annular rim (24) with a double row of cogs (21, 25), one row being arranged on its cylindrical wall and the other on the vertical wall (26) of the annular rim (24). When the push-button (20) is pressed downwards and slightly rotated in the direction for untightening the cap, the cogs (21) of said push-button engage the corresponding cogs (15) belonging to the inner element (10) thereby maintaining the push-button integral with said inner element until the outer element (30) is rotated in the direction for tightening the cap.

Inventors

SANTAGIULIANA EVANS

Latest standardized assignees - inventors removed

TAPLAST